CALIFORNIA
OIL WORLD

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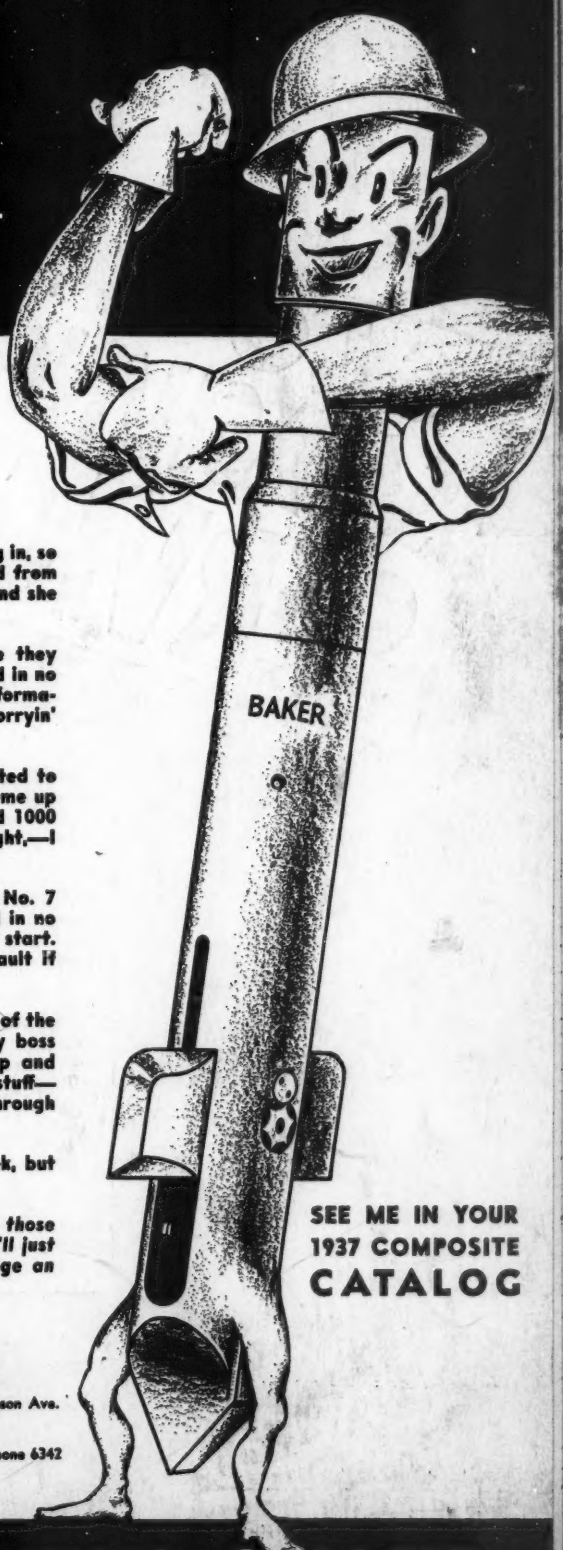
I ASKED FOR WORK AN' DID I GET IT!



I TOLD you fellows I was rarin' to work and if you don't think I've been busy, just take a look at my last week's work sheet.

MONDAY—that No. 1 Well was just about ready to bring in, so the boss sent me down to scrape away the plastered mud from the sand so she'd come in quick and easy. I did my stuff and she came in for 1700 barrels.

TUESDAY—things were in an uproar—an' all because they couldn't get a water shut-off on No. 4. So down I went and in no time at all I'd reamed out all the old cement and enough formation so's the boys could go ahead and recement without worryin' about whether she'd hold this time.

WEDNESDAY—I really earned my pay. The boss wanted to set a 6⅝" liner through an 8⅝" water string. They fixed me up with 9¼" blades, and in less than sixteen hours I reamed 1000 feet of sandy blue shale from 7⅞" to 9¼". Yes, you're right,—I didn't loaf a bit.

THURSDAY—Was the Supe wild when they surveyed No. 7 and found 'er 4 degrees off. They put me on the job and in no time at all I'd cut a wide, square shoulder for a new bit start. Did that hole get back to vertical? Well, it wasn't my fault if it didn't.

FRIDAY—was the day for setting 6⅝" in No. 9—the jinx of the field. She'd been a mighty expensive hole so far and my boss wanted to be sure of getting a good body of cement up and around the shoe and casing. I went down and did my stuff—wall-scraping about 40 foot of hole and when they got through cementing and tested, she was as dry as a bone.

SATURDAY—no work Saturday—I'm on a five-day-week, but in case of emergency, I'm always on call.

I'd sure like to "scrape" up an acquaintance with those who haven't gotten around to tryin' me out yet and if you'll just drop a line to my boss at his nearest office, he'll arrange an introduction. I'll be seein' you!

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Vol. 30
No. 5
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CALIFORNIA
OIL WORLD
and Petroleum Industry

THE WORLD'S OLDEST OIL TRADE PUBLICATION

MARCH 5, 1937
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COMING EVENTS

March 12
Interstate Compact Commission Meeting, Oklahoma City.

March 17-19
American Association of Petroleum Geologists, 22nd Annual Convention, Biltmore Hotel, Los Angeles.

April 8
C. N. G. A. Monthly Dinner and Meeting, Barker Bros. Cafe.

April 13
American Petroleum Institute, Division of Production, Pacific Coast District, Biltmore Hotel.

May 23-27
National Association of Purchasing Agents (Oil Company Buyer's Group) Annual Convention, William Penn Hotel, Pittsburgh.

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CALIFORNIA
OIL WORLD
and Petroleum Industry

To The A. A. P. G.

The American Association of Petroleum Geologists, meeting in California for the third time since the society has been in existence, and for the first time in ten years, will find that California is not only unusual for its unusually unusual climate, but also for some of the problems it presents the gentlemen of the geological profession.

The main problem for the past two or three years has been the locating of suitable structures to test with the drill. For the past several years, the opinion has been that maybe California was all through as a producing state, that all of the structures which might prove to be oil bearing had been drilled, resulting either in an oil field, or in the condemnation of the area. Just as that opinion was gaining such widespread support that it was becoming generally thought to be true, and when the oil business had about decided that new producing areas simply didn't exist here, the Shell Oil Company brought in 10 Sections, and the Standard Oil Company immediately followed with the Greeley area, to say nothing of General Petroleum's discovery of production at Wilmington, and Richfield's discovery at El Segundo.

The result is that many areas, heretofore condemned with little or no trial, are receiving speculative glances and considerable geological thought, and, with the cooperation of the geophysicists, a great deal of surveying of one kind or another—and the inevitable result will be, we are convinced, still further discoveries of producing areas.

For discovering oil where none heretofore existed is the business of geologists and their allies, geophysicists.

For California, one of the early producing states of the nation, and from time to time of greater or lesser interest to the oil industry, the selection of a California man, Dr. Ralph Reed, to head the society, and the selection of Los Angeles as the place for the annual meeting, are both honors which the California Oil World is proud to take this method of acknowledging.

STANDARD OIL COMPANY

of California

By Douglas G. McPhee

Chapter III—Transition . . . 1900-1914

On Monday morning, Oct. 28, 1901, three Standard Oil men stepped down from a Southern Pacific train at Barrett, a flag stop in Contra Costa County. They were William S. Rheem (who was to become the president of Standard Oil Company of California 16 years later); J. C. Black, chief engineer; and Ed J. Garrard, mason foreman.

In a three-seated surrey, the three drove along the dusty country road to the tiny settlement of East Yards, a railroad town situated close to San Francisco Bay at the terminus of the Santa Fe transcontinental line. At a tract of land just north of the town, Rheem drew rein. Before him stretched 600 acres of rolling, stubble-covered land which his company had purchased a few months before as the site for a new refining plant.

Rheem, Black and Garrard had a job to do, and they were impatient to begin. Before sundown a man had been hired and set work to clean up an abandoned farmhouse on the property which could serve as a main construction office; other men with teams had started grading; and the Richmond refinery was on its way to completion.

This move was typical of a new phase of development which had begun for Standard Oil Company in California with the dawn of the century. Its foundation period had ended in the early eighties; a period of gradual expansion and consolidation had extended from 1884 to 1900; and now, with the twentieth century, it had started upon a program of expansion which dwarfed even the great dreams of its founders.

The earliest of these forward steps was not taken under the name of Standard Oil, for it was not until 1906 that Pacific Coast Oil Company gave up its individual identity. The organization which is now Standard Oil Company of California had begun as the California Star Oil Works Company. In 1879, recognizing the need for a larger sweep of operations, it had become the Pacific Coast Oil Company. In 1890 it had effected an alliance with Standard Oil, which contracted to sell the entire production of the Pacific Coast Oil Company. And in 1900 it passed actually into Standard's corporate structure by stock purchase. But not until 1906 did it operate under the Standard name.

> "Once 'coal-oil' was universally burned for illumination in the American household, and the horse-drawn vehicle was the popular conveyance. The petroleum industry was engaged in the manufacture of products demanded by the times, such as kerosene, axle grease and harness oil. Then came the invention of the internal combustion engine, followed by the advent of the automobile . . . ."

There were other changes in name and control to come during the next few years. After the historic Standard Oil dissolution decree of 1911, the California organization became Standard Oil Company (California). Finally, in 1926, it assumed its present name. In order to avoid confusion, in tracing its history during the period from 1900 to 1914, we shall refer to it in this chapter as Standard Oil in California.

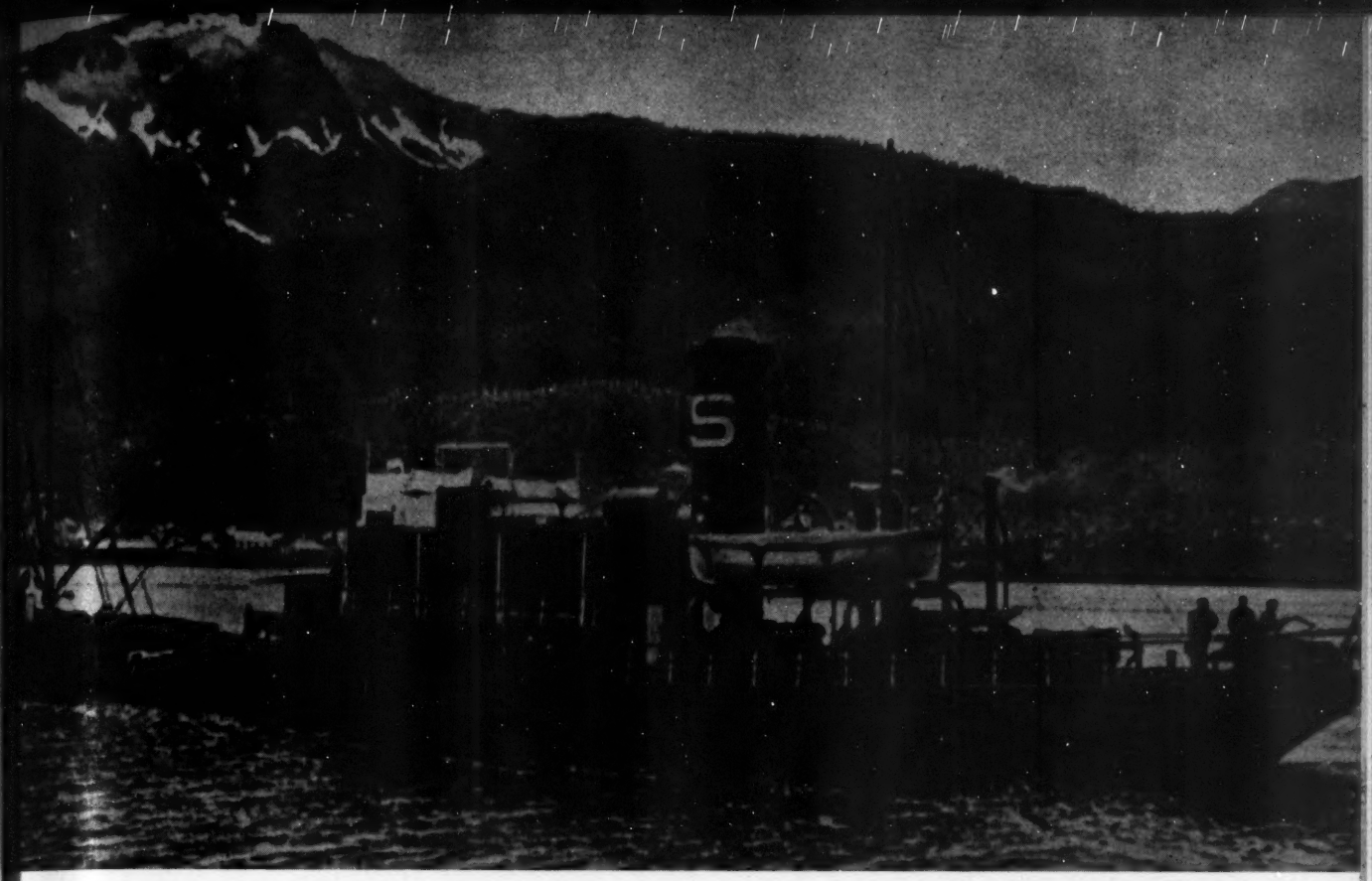
Most Important Oil Company

When Rheem and his companions went out in the fall of 1901 to look over the site for a new refinery, they were representing the most important concern in the oil industry of California, but the industry itself was by no means the important factor in California's economic life that it is now—or that it was only a few years later. In the 25 years since D. G. Scofield emerged from the Santa Susana mountains with a firm conviction that oil was to be found in the upper reaches of Pico Canyon, oil had become an established industry of the state; but the state itself had grown faster than petroleum.

The population of California by 1900 had reached one and a half million; it had almost doubled in two decades. The state was no longer interested primarily in mineral wealth; agriculture had outdistanced mining long before. A new California of diversified resources had begun to appear. In 1900, the state was fifth in the nation in volume of petroleum production; its wells in that year yielded only 4,325,000 barrels of oil, valued at $4,153,000. This was not an impressive figure alongside the $64,000,000 value accorded to the products of its farms in the same year.

But, as we have noted in a preceding chapter, Standard Oil based its business on people, not on oil wells. It had devoted itself, from the days of its organization in Cleveland by Rockefeller and his associates, to meeting consumers' needs for the

Mitchum, Tully and Company, California investment bankers, cooperating with the California Oil World, are making possible this series of articles telling of the origin, growth, and development of the companies making up the California oil industry of today.



The "George Loomis", Pacific Coast Oil Company's first oil tanker, and the first steel oil tanker built and operated on the Pacific Coast.

services that petroleum products could offer. Hence, to Standard Oil, the populational and commercial growth of California was more significant than any increase in production; and it held great promise for the western activities of the company, which were hard put to keep up with the growth of the market.

Standard's production, refining and transportation processes had been improved and accelerated. But also new uses had been found for crude and refined oil. And now the Alameda refinery, which in 1884 had been characterized as "extensive, complete and solid," was taxed to capacity. Once more Standard in California was challenged to expand in order to keep pace with its opportunity.

Then, in the production field, things began to happen. In 1900, four important new fields came in—Kern River, Wiley Canyon, Brea Canyon, and Midway-Sunset. They came in with a roar. In a year California production was almost doubled. Standard in California took the step that was essential if it was to hold its leadership in the industry. It built the Richmond refinery.

The Richmond Refinery

On July 3rd, 1902, the first oil flowed into that refinery. It was by far the largest refining plant on the Pacific Coast and one of the largest in the world. It housed the newest, most efficient equipment and its 19 stills had a daily capacity of 10,000 barrels of crude oil. In the first full year of operation 3,317,000 barrels of crude ran to the stills—about 80 per cent of the petroleum refined by all the plants in California. The other 34 refineries in the state shared the remaining 20 per cent of the business.

With the completion of the new refinery, Standard in California removed its plant headquarters to East Yards, later known as Point Richmond. Its advent wrought great changes in that little town. Within eight months from the day when Rheem, Black and Garrard took their dusty drive, East Yards had become the center of the oil refining industry of the Pacific Coast. Standard had invested nearly a million dollars in its new plants, and in two years was to invest over a million more. The refinery's payroll meant much to the community in population, prestige and prosperity. It is not surprising that the city fathers soon saw fit to recognize the change that had taken place by officially adopting the name of Richmond for the municipality.

Meanwhile, Standard in California was making corresponding advances elsewhere. In 1903 it completed its new pipeline direct from the heavily producing Kern River and Coalinga fields to Richmond. The line was 8 inches in diameter and 280 miles long. With its 29-mile branch from Coalinga field, it was easily the most important pipe-line property in California. Its completion marked another major step in oil transportation in the state and in Standard's policy of keeping ahead in the refining of petroleum.

Still another Standard development of 1903 was the construction of the San Pablo tank farm, five miles east of the new refinery. On this 164-acre property were built 25 steel

Top: One of the early horse-drawn tank wagons, in use about 1897. Center: Standard Oil's first office at Point Richmond in 1901, with, left to right: J. C. Black, Joe Hai, Col. W. S. Rheem, W. C. Harris, M. S. Cooper, Ed Garrard, E. A. Gowe, and, seated, Benny Semple. Bottom: Artist's conception of the San Francisco plant of the Arctic Oil Company, the purchase of which, in 1902, extended Standard's marketing activities to Alaska.

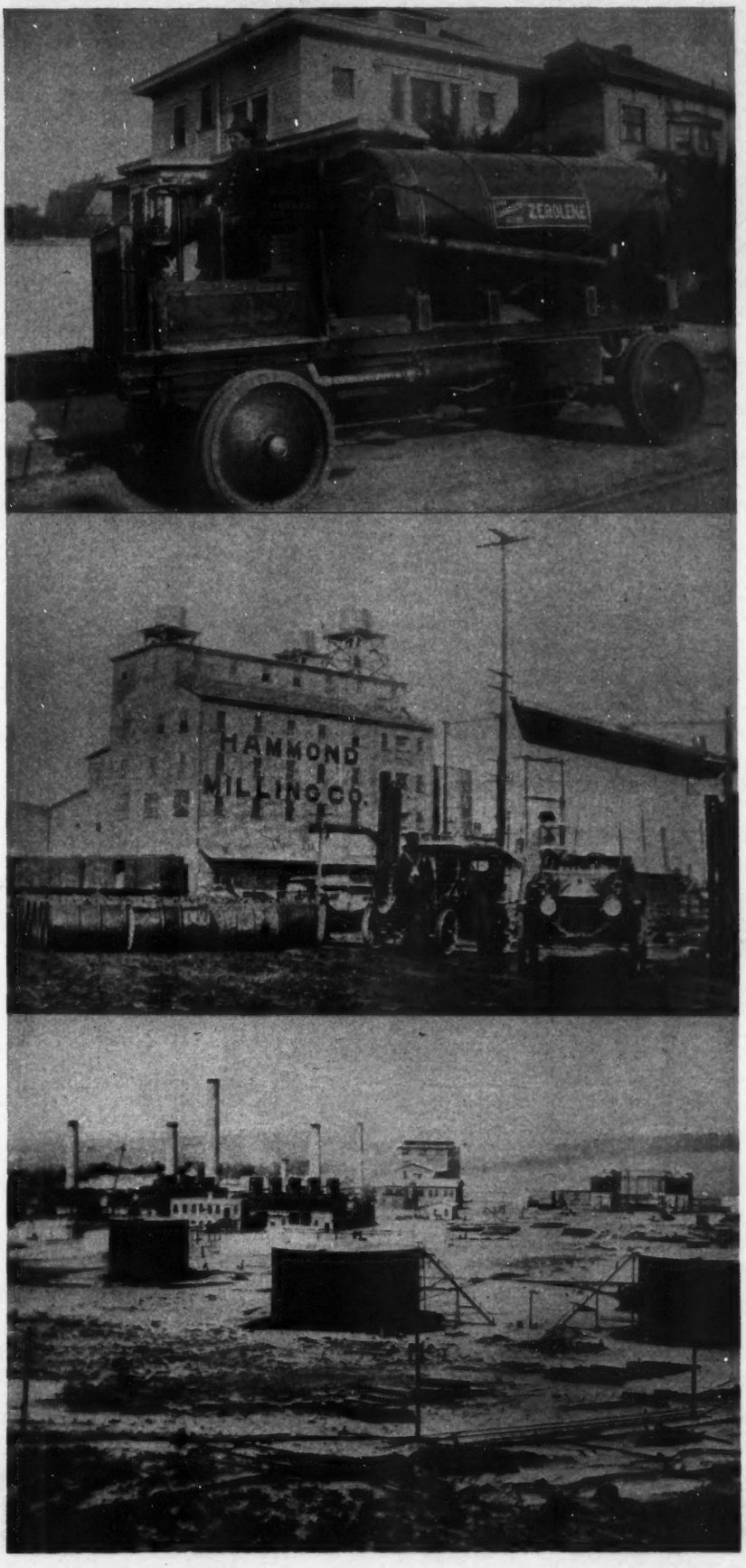
storage tanks into which emptied the steady flow of oil from the Kern River-Coalinga pipeline. This was a new move in the industry, and it proved a sound one. It assured a constant supply to the refinery and allowed for operation of the pipeline at maximum efficiency.

Marketing Expansion

While these moves were being made, Standard's marketing machinery was also expanding. The sales agencies which were the chosen method of opening markets reached out into the newer, more sparsely settled parts of the West. The company saw many opportunities in far flung territories, Alaska, the Orient, and Central and South America. The company entered these export markets in many different ways, pioneered in new communities and grew with them as they developed into full-fledged markets.

The events of the earliest years of the new century radically altered the importance of the oil industry to California, and of California to the industry. Development of new fields suddenly drew the eyes of the world once more to the mineral treasures that remained to be uncovered by the geologist and wildcatter. From fifth position in 1900, California rose almost overnight to become the leading petroleum producing state. In 1903, crude production amounted to 24,382,000 barrels, nearly six times the production of 1900. There were now nearly 3000 producing wells, and the center of interest of the oil industry shifted to Kern County. The entire United States produced only 100,000,000 barrels of oil that year, and 17,000,000 barrels came from Kern County wells. It is not surprising to discover that the company which had the principal pipe-

Top: Standard Oil's first motor truck, 1910. Center: The company's first service station, in operation in 1907, in Seattle, Wash. Said to be the first service station in America, and probably in the world. Bottom: Standard's El Segundo refinery in 1911.



line from Kern County was the Standard in California.

It is important to note that Standard, through these years, had not achieved a position in production comparable with its position in refining and transportation. This was consistent with the traditional policy of the organization; it was consistent with John D. Rockefeller's early advice to his associates at the inception of the company. In 1860 he had predicted that the big oil profits would be found in transportation, refining and sales. Forty-four years later Standard's annual report showed the following California holdings:

Value of producing properties	$ 271,214
Fixed investment in Richmond refinery	2,119,550
Fixed pipe-line investment	6,212,696

This was a reflection of how carefully Standard Oil had followed its founder's precepts.

A Remade Industry

But Rockefeller could not look over the hill of the century and see what was coming. In 1904 the oil industry was not far different from what his amazing imagination had previsioned, but in another ten years it was to be transformed, and a new industry created on an entirely different foundation. All over the land, carbon filaments in glass bulbs were beginning to glow dimly; the electric light was at hand and the coal-oil lamp was doomed. But at the same time an awakened, imperfect, noisy, troublesome vehicle was moving into the consciousness of the world. In a decade, it was to gather tremendous speed. As it chug-chugged over the horizon, this one-lung, four-horsepower infant pulled a giant. And that giant proceeded to remake the petroleum industry in his own image.

The Oil Investors Journal of July, 1904, carried an advertisement that gave many oil men of that day a hearty laugh. It showed an illustra-

tion of a quaint contraption best known as a "horseless carriage". Below the drawing of this oddity the imaginative copywriter glowingly called attention to the superiority of the "Oriental Buckboard," a one-cylinder, rear-engine job especially priced at $425. In inspired terms the copywriter set forth the remarkable fact that this "gas buggy" was propelled forward by a four-horsepower gasoline motor. No doubt a few of the more progressive readers of the Oil Investors Journal tried out the new conveyance, with a double interest—first, to see whether it would really run; second, to judge whether gasoline motors propelling such vehicles might, some day, provide a substantial outlet for that drug on the market, gasoline, which the refineries were obliged to produce regardless of an almost non-existent demand.

But even those with the keenest sense of the automobile's potentialities could not appreciate what was to come. Only 22,000 automobiles were manufactured in 1904; in 1914, motor car registration in the United States exceeded one million. The former waste-product, gasoline, outsold the old staple, kerosene.

This is not the place to tell the story of the growth of the automobile industry. But the development of petroleum or of a company like Standard Oil in California, can not be related without reference to it. From 1904 to the present, oil and the automobile have been interdependent industries. And as the automobile moved forward into public acceptance, Standard Oil policies and practices were intimately affected.

Standard Oil in California grew rapidly in 1906 and 1907 and as it grew, important changes took place. On July 23, 1906 the company officially changed its name from Pacific Coast Oil Company to The Standard Oil Company (California). Two months later its capital stock was increased to $25,000,000. Crude oil production had increased 600 per cent over the 1900 figure; the average price of California petroleum had declined from 96 cents to 25 cents a barrel and overproduction had reared its ugly head.

But by 1907 prices were rising and Standard, alert to the new uses and increasing consumption of petroleum products, decided to enter the producing field aggressively. A Producing Department was immediately created. New lands were bought and leased; active drilling was started; producing wells were purchased. That year Standard operated extensively in the Midway-Sunset field which seven years later became the largest producing field in the United States. In the first year after this new policy became effective, Standard produced 796,796 barrels of crude oil.

Standard in California was one of the first oil companies to accord the automobile a place in its own business. In 1907 the pipeline department prevailed upon a reluctant purchasing department to buy a two-cylinder Rambler for use in the San Joaquin Valley. It proved a boon to the pipeline trouble-shooters whose work required them to cover many miles daily. Getting places in a hurry meant efficiency, and the little Rambler, for all the trouble it gave, was a great improvement over the horse and buggy.

The First Service Station

But a more important event—probably the most significant event, indeed, in the whole period which we are here describing — occurred in 1907. Standard Oil Company, which had traditionally realized that the consumer was the basis of its success, gave a bow to the consumer on wheels. It established a service station. Standard believes it was the first service station in America.

Since the appearance of the automobile on the Pacific Coast in 1905, Standard's main plant in Seattle had received requests for "service" with increasing frequency. Filling tanks from five-gallon cans was slow, cumbersome and altogether unsatisfactory to both customer and company. Accordingly, in the spring of 1907, John McLean, head of the Seattle sales department, requested Henry Harris, company engineer, to install opposite the main gate a small tank that would properly serve the company's customers. The next day Harris constructed a 30-gallon tank, ran a feed-line from the main storage tank, affixed a glass gauge, attached a valve-controlled hose, built two display shelves for oils and greases—and the first service station was ready for business.

At first only fifteen cars were served daily but within a few months this number increased to 200. Again Standard had pioneered. The crude recognition extended to the importance of customers' convenience in 1907 grew into today's far-flung system of neon-lighted temples of convenience.

These were the gay trust-busting days. The great corporate structure that was known, loosely, as Standard Oil, was selected as a special target. The story of the so-called "dissolution suit" is familiar to oil men. In 1911 the Supreme Court of the United States ordered that the Standard Oil Company of New Jersey should be broken down into its chief component parts. Standard Oil Company (California) was owned by the New Jersey corporation; its ownership was transferred to the stockholders of the latter corporation on a complicated pro-rata basis —roughly one-fourth of one share of stock in the California company for each share owned in the New Jersey Company. D. G. Scofield, who had fathered the company in 1875, now became its president.

From that year, Standard in California went forward as an autonomous corporation. Only a few men know to what extent its policies have been directly influenced, if at all, by other companies of the Stan-

dard Oil group. Probably the principles ingrained in the years of direct control, the lessons learned, the traditions absorbed, were more potent than any other influences in establishing a continuity of policy.

There was another important heritage from the old days, however. That was Standard Oil men. From Standard Oil of New Jersey headquarters, in 1906, came a young man who was to have a marked influence on the company. In '97 he had made a modest entry on the oil scene in Pennsylvania as a member of a pipeline construction gang. For two years he worked as an oil gauger. In 1900 he joined the head office of the Standard Oil Company of New Jersey, spent six years in the ranks, and in 1906 was appointed New York agent for the California Standard Oil Company. In 1911 he came to San Francisco; since that time he has assumed large responsibilities. His name is Kenneth R. Kingsbury.

The period 1907-1914 was one of continuous expansion. Petroleum was steadily increasing in magnitude and importance as new fields came in. The industry was changing its complexion and advancing in complexity. New refineries sprang up; new pipe lines were built and soon torn out to make room for even larger ones; new sales territories were opened in this country and across the seas. And Standard kept up. It protected its lead. It met advance with advance.

So many things took place that they can not be recounted in due order. We must be contented with a glance at Standard in California as it ended the transitional period.

In the seven years from 1907 to 1914 it grew from a $6,000,000 to a $100,000,000 corporation. It accumulated a surplus of $40,000,000. The value of its producing properties grew from a little over a million dollars to more than $28,000,000. And in 1914 these properties yielded 13,550,809 barrels of oil, valued at approximately $8,000,000. Two new refineries were built at Bakersfield and El Segundo—which, together with the Richmond plant, represented a fixed investment of $16,960,000 and had a daily capacity of 95,000 barrels.

By 1914 the Standard Oil fleet numbered 28 vessels with a total capacity of 435,650 barrels. Standard pipe lines ran direct to the refineries from practically every major field in California. Motor trucks delivered Standard products; Southern Pacific used more than 30,000 barrels of crude oil daily and gas manufacturers were listed among the company's biggest customers. In 1914 the sale of motor fuel in the United States reached a total of 29,763,000 barrels and for the first time outsold kerosene—by more than 7,000,000 barrels. The transition of the oil industry from light to speed was accomplished. The automobile had arrived. The modern petroleum era had begun.

Another installment in this series will appear in the next issue.

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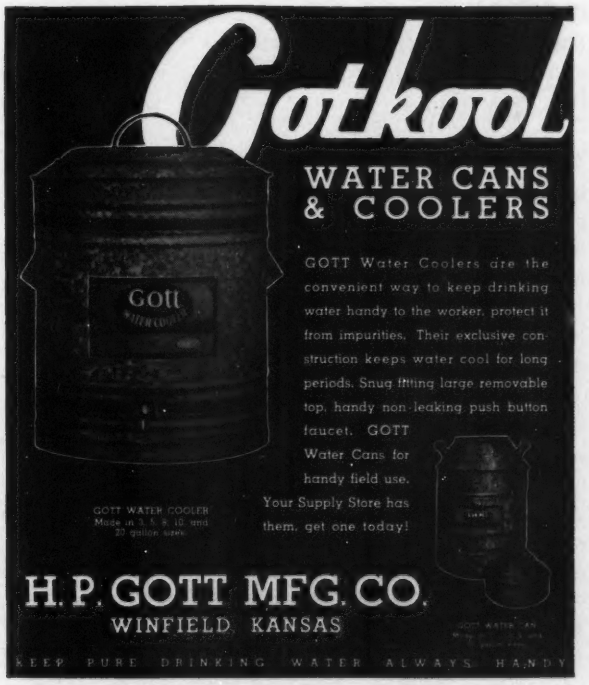
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A.A.P.G. Holds Annual Meeting In Los Angeles

Convention opening March 17th is the third to be held in California, and the first held here since 1928. It is the 22nd annual convention of the Association, and will, in California, find the prime topic to be the ascendancy of geophysics in discoveries in the state.

Dr. Ralph D. Reed
President, A. A. P. G.

For the third time since the formation of the society, the American Association of Petroleum Geologists is meeting in California for its annual business and entertainment session. The first California meeting was held in Los Angeles in 1923, the second in San Francisco in 1928, with the latter divided into two parts, the business sessions being held in San Francisco, and the field trips, annual banquet and golf tournament headquartering in Los Angeles.

This year's meeting, the 22nd annual convention, will open Mar. 17, continuing through Mar. 19, with field trips to various points of geological interest in the Los Angeles Basin and in the San Joaquin Valley and Ventura county on the two days following.

Officers of the Association for the present year are Dr. Ralph D. Reed, of The Texas Co. of California, president; A. Irving Levorsen, past president; Carrol E. Dobbin, vice president; Chas. H. Row, secretary-treasurer; L. C. Snider, editor. Officers of the Pacific Section are Harry R. Johnson, president; James C. Kimble, secretary treasurer.

The general Convention committeemen are: Frank A. Morgan, chairman, C. R. McCollom, G. C. Gester, Vernon L. King, R. W. Sherman, R. S. McFarland, W. B. Heroy, Frank R. Clark, and Robert B. Moran.

Convention headquarters will be at the Biltmore Hotel, Los Angeles, with technical sessions being held in the Ballroom and the Research Committee Dinner in the Music Room. Meetings of the Society of Economic Paleontologists and Mineralogists and of the Society of Petroleum Geophysicists will be held in collaboration with those of the geologists.

Importance of Geophysics

The convention this year will find the study of geophysics and its related problems in California one of the prime subjects of interest to local geologists. Discoveries of Ten Section and Greeley, the two most recent fields in California, due in great part to the work of geophysicists in collaboration with geologists, have opened an entirely new conception of possible productive structures in this state.

Geophysics is in its ascendancy in California. Much will be learned by hearing the papers and talking with the large group of men who are locally doing outstanding work along that line. California stratigraphic problems and their relation to oil accumulation are complex. This convention will give geologists an opportunity to learn of them by direct contact.

Great progress has been made in well surveying, electrical logging, gun perforating of casing, orienting of cores and mapping methods. An opportunity will be afforded visiting geologists to hear and see for themselves.

The problem of future reserves for the state has probably assumed a greater relative importance to local geologists than at any time in recent California oil history, outweighing, for example, the problems paramount in California at the time of the previous conventions held here.

Former Conventions

The California Oil World of 1923, in reporting the convention of that year, said that California was responsible for the troubles of the producing branch of the industry then in existence, which were mainly characterized by overproduction, the blame for which was laid at the doorstep of Signal Hill, Huntington Beach, and Santa Fe Springs in great part.

In 1928, the California Oil World said:

"This is the second meeting of the Association in California. The first was held in Los Angeles in September, 1923. At that time California was the most important factor in the oil production of the world. The oil industry was keenly interested in having its geologists understand the California situation so that the Los Angeles meeting was extremely well attended.

"At this time the situation in California is also of extreme importance to the industry. There has been initiated by the Governor of Cali-

Left to right, top row: Harry R. Johnson, president; James C. Kimble, secretary-treasurer, Pacific Section; Frank A. Morgan, general chairman, Convention Committee. Second row: H. J. Steiny, chairman, Transportation; H. W. Hoots, chairman, Technical Program; Earl B. Noble, Hotels; A. A. Curtice, Finance. Third row: J. E. Elliott, Registration; Angus McLeod, Golf; W. S. W. Kew, Field Trips. Bottom row: R. M. Barnes, Publicity and Exhibits; R. G. Reese, Entertainment; C. R. McCollom, Reception.

fornia, through the cooperation of the major oil companies in the state, one of the most far-reaching movements in oil and gas conservation ever undertaken in the United States. This movement contemplates the conserving of from seventy-five to one hundred million cubic feet of gas per day, and of from sixty to seventy-five thousand barrels of oil which would be produced with the gas.

"The importance of this movement will be studied by these technical people, in order that the California procedure may be properly understood and reported to officials in the oil producing states in the Mid-Continent. This movement is well under way, and by the time the association is in session the entire program should be in effect. It is therefore of interest to note that the two meetings of the Association in California have been most timely and when California was of extreme importance as a factor in the oil situation in the United States."

Registration

Registration facilities will be provided beginning Monday, Mar. 15, in the Galeria of the hotel. All those in attendance are requested to register as soon as possible so as to enable the committees in charge of entertainment, field trips, golf, etc., to make proper arrangements and to facilitate the location of friends at the convention. Printed programs, badges and information will be available at the registration desk. No registration fee will be required and no cards of admittance will be necessary for the technical sessions. Non-members and friends interested in petroleum geology and allied sciences are invited to all technical sessions and are requested to register as guests.

Technical Program

The technical program will start with the increasingly famous Research Committee dinner to be held in the Music Room of the Biltmore Hotel on Tuesday night March 16. Here Dr. Parker D. Trask will lead an open forum on "The Origin of Oil" and many a heated argument in the spirit of goodfellowship will ensue. All Association members are invited and urged to attend.

The general technical program will begin Wednesday morning, March 17, in the Ball Room of the hotel and will continue through March 18 and 19. The program is well rounded and will appeal to geologists from all parts of the world. A high light will be the presidential address by Dr. Ralph D. Reed. The program will include papers relating to geology, oil possibilities and recent developments in all oil producing and prospective producing states of the Union, as well as foreign countries. Many general papers are included relating to geophysics,

PROGRAM, TWENTY-SECOND ANNUAL MEETING
THE AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS
BILTMORE HOTEL, LOS ANGELES
MAR. 17, 18, 19, 1937

WEDNESDAY, 9 A.M.-12:15 A.M.

Address of Welcome, A. L. Weil, Pres., General Petroleum Corp.
Response, A. I. Levorsen, Past-Pres. of the Association.

TECHNICAL PAPERS

Ralph D. Reed—Presidential Address—Southern California as a Structural Type.
Drexler Dana—Historical Development of California Oil Fields.
Wallace Pratt—Discovery Rates in Oil Findings.
E. De Golyer—The Future of Exploration for Petroleum.
James M. Kirby—The Geology of the Sacramento Valley.
Alex Clark—Miocene Correlations Across the Southern San Joaquin Valley.

WEDNESDAY, 1:45 P.M.-4:45 P.M.

Frank Rieber—Motion Picture Presentation of Reflected Wave Pattern from Various Geological Structures.
L. W. Blau—The Interpretation of Geophysical Data.
John L. Rich—Application of the Principle of Differential Settling to the tracing of Lenticular Sand Bodies.
Joseph Neely—The Stratigraphy and Petroleum Aspects of the Sundance Formation and Related Jurassic Rocks in Wyoming.
Ross L. Heaton—Stratigraphy versus Structure in the Rocky Mountain Region.
Warren O. Thompson and Harry W. Osborne—Paleozoic Stratigraphy and Oil Prospects of Eastern Colorado.
John G. Bartram—The Upper Cretaceous of the Rocky Mountain Area.

THURSDAY, 9 A.M.-12 NOON

Joseph S. Irwin—Oil and Gas Possibilities of Western Canada.
Charles E. Weaver—Geology and its Relation to the Possible Occurrence of Petroleum in Oregon and Washington.
N. Wood Bass—The Verden Sandstone of Oklahoma.
E. O. Markham and L. C. Lamar—The South Burbank Pool, Oklahoma.
E. G. Thompson—Fault System of Northeast Texas with Emphasis upon the Talco Structure as a Type.
Herschel H. Cooper—Occurrence and Accumulation of Oil in the Laredo District of Texas.
E. Russell Lloyd—Interpretation of Permian Stratigraphy of West Texas and New Mexico.
Max Bornhauser—Geology of the Tepetate Field, Acadia Parish, Louisiana.

THURSDAY, 1:45 P.M.-5:00 P.M.—SYMPOSIUM ON RECENT DEVELOPMENTS

Marvin Lee and George Baughman—Kansas and Nebraska.
A. E. Brainerd and Chas. S. Lavington—Rocky Mountain District.
Frederic A. Bush—Oklahoma.
W. B. Heroy—Foreign Countries.
Basil B. Zavoico—Russian Oil Fields.
M. G. Edwards—California.
Berte R. Haigh—West Texas and Southeastern New Mexico.
Harry H. Nowlan—Southwest Texas.
A. W. Weeks and John E. Galley—North and West-Central Texas and the Panhandle.
O. L. Brace—Gulf Coast.
Wallace Ralston—Northeast Texas.
Dwight H. Bingham—Arkansas and North Louisiana.

FRIDAY, 10:00 A.M.-12 NOON

J. Brian Eby and Michel T. Halbouty—The Spindletop Oil Field, Jefferson County, Texas.
S. Grinsfelder and W. S. Eggleston—The Geology of the Dominguez Oil Field, California.
J. Marvin Weller and Alfred H. Bell—The Illinois Basin.
Donald C. Barton—Variation of Oil in the Gulf Coast.
E. D. Lynton—Laboratory Orientation of Well Cores by their Magnetic Polarity.

air mapping, orientation of cores, the future of oil, treatment of wells, and so on.

The Society of Economic Paleontologists and Mineralogists will hold a one day meeting, probably on Mar. 17, in suitable quarters in the Biltmore. The morning program will be devoted to a symposium on California formations, from Cretaceous to recent, led by eight prominent California paleontologists. This program should be of great interest to workers in other parts of the country. The afternoon session will be of a general nature.

FRIDAY, 1:30 P.M.-3 P.M.

Francis Shepard—Salt Domes off the Gulf Coast.
B. W. Blanpied and Roy T. Hazzard—The Age and Correlation of the Chickasawhay and Bucatunna members of the Catahoula, Wayne County, Mississippi.
B. W. Blanpied—The Age and Correlation of the Salt Mountain Limestone, Clarke County, Alabama.
W. L. Cozzens—The Latest Developments in Aerial Photographic Mapping.

PAPERS BY TITLES

Bruce L. Clark—Folding of the California Coast Range Type Illustrated by a Series of Experiments.
P. E. Fitzgerald and W. Wray Love—The Importance of Geological Data in the Acidizing of Wells.
E. A. Koester—Studies of Lower Paleozoic Formations in Central Kansas.
O. L. Brace—Interrelationship of Geology and Geophysics.
Arthur S. Huey—The Geology of the Tesla Quadrangle, near Tracy, California.
Frank M. Anderson—The Knoxville Series in the California Mesozoic.
Kenneth Dale Owen—The Placedo Field of Victoria County, Texas, in Its Relationship to Gulf Coast Stratigraphy.
George S. Buchanan—Cheneyville Oil Field, Rapides Parish, Louisiana, and Its Relation to the Areas of Mother Salt Deposition.

PALEONTOLOGY AND MINERALOGY DIVISION

THURSDAY, 9:00 A.M.-12:30 P.M.

SYMPOSIUM ON CALIFORNIA CRETACEOUS AND TERTIARY STRATIGRAPHY AND PALEONTOLOGY

Paul P. Goudkoff—The Cretaceous of the Northern San Joaquin Valley.
Frank B. Tolman—Review of the California Eocene.
Hubert G. Schenck, E. R. Atwill, B. L. Clark, L. C. Forrest, R. M. Kleinpell and **Chester Stock**—A Review of the California Oligocene.
Robert M. Kleinpell—The Miocene of Central California.
Wilbur D. Rankin—The Miocene of Southern California.
Herschel L. Driver—Correlation of Oil Fields within Los Angeles Basin, California.
W. D. Holman—The Stratigraphic Relations of Pliocene Surface Sections of the Los Angeles District.
William F. Barbat—The Pliocene and Pleistocene Formations of San Joaquin Valley.
Bradford C. Adams—The Pliocene of the Ventura Basin.
U. S. Grant—Some Observations on the Pleistocene of the Los Angeles Region.
Manley L. Natland—The Distribution of Recent and Later Tertiary Foraminifera in Southern California.

THURSDAY, 2 P.M.-3:30 P.M.

Merle C. Israelsky—Gulf Coast Markers in the Eocene of Marysville Buttes, Calif.
W. P. Woodring—Paleographic Implications of the Larger Fossils from the Repetto Formation of the Los Angeles Basin.
Charles Reiter Canfield—The Subsurface Stratigraphy and Micro-paleontology of the Santa Maria Valley, California.
Donald W. Gravell and Marcus A. Hanna—A New Horizon, Lepidocyclina texana Gravell and Hanna, n. sp. ms. in the Heterostegina Zone, Upper Oligocene of Texas and Louisiana.
Stanley G. Wissler—Foraminiferal Zones of the Dominguez Oil Fields, Los Angeles County, California. (By Title).
H. L. Durgan—Species of the Genus Cytheropteron from the Weno Formation (Middle Washita) of Southern Oklahoma and Northern Texas. (By Title).

PETROLEUM GEOPHYSICISTS SESSION

Below is a partial list of papers to be presented at the Geophysicists Session:
Beno Gutenberg—Geophysics as a Science.
H. B. Bryan—Discussion of the Gravity Meter.
Morton Mott-Smith—
M. H. Dilmore—Earthquake Investigations.
J. J. Jakosky and C. H. Wilson—Electrical Prospecting for Oil Structures.
J. A. Sharpe—Magnitude and Character of Elastic Waves Produced by Explosion Pressures.
Harold Washburn—Transient Characteristics of Seismograph Apparatus.
S. A. Scherbatskoy and J. Neuseld—Fundamental Relations in Seismometry.
Henry Salvatori—The Mapping of Faults by the Reflection Method.
D. G. C. Hare—A New Source of Damped Wave Trains Suitable for Testing of Geophysical Instruments.
Curtis H. Johnson—Use of the Sonograph in Mapping Faults.
E. E. McDermott—Discussion of Multiple Recording.
G. H. Westby—Some Phases of Seismic Reflection Work in Antarctica.
Gilbert Smith—

Exhibits

A comprehensive group of exhibits interesting to petroleum geologists, paleontologists and geophysicists will be placed in the large foyer adjoining the Ball Room of the Biltmore Hotel in which general technical sessions will be held. These exhibits will depict various geophysical methods, well surveying, electrical logging, water locating devices, specialized core bits, oil field and airmaps, gun perforating of casing, geological and paleontological instruments and methods of orienting cores. It is expected that delegates to the convention will be stimulated by the many new and modern features relating to finding of oil which they will find in the exhibition hall.

Entertainment

Suitable relaxation after the mental strain of technical sessions and the rigors of field trips is being provided by a competent committee. The Research Committee dinner on Tuesday, night, March 16, will combine technical and entertaining features. For Wednesday night, Mar. 17, a smoker and trip to the new and already famous Planetarium are being considered. The climax in the convention's program of entertainment is always the annual dinner dance and ball. For this purpose the world famous Biltmore Bowl of the Biltmore Hotel has been reserved together with its entertainers for Thursday night, Mar. 18. A number of group dinners and luncheons will be held during the convention.

Ladies' entertainment is being arranged under the leadership of Mrs. W. S. W. Kew and will include luncheons, fashion shows, and various sight-seeing trips including the Huntington Library and moving picture studios.

Hotels

Suitable reservations for the Bilt-

A geologist's dream come true—an exposure of one of California's most perfect anticlines, in San Miguelito. The anticline may be seen from the site of Continental Oil Co's. Grubb No. 5 off the Coast Highway about 6½ miles north of Ventura.

more Hotel will be made through cards which have been mailed to all members of the Association. Non-member guests will be taken care of by the Biltmore Hotel and Hotel Committee.

Golf

Golf addicts in the roster of the association will have an opportunity to capitalize on their ability on Friday afternoon, Mar. 19. A committee under the leadership of Angus McLeod, who by name should be well qualified in such matters, has arranged a tournament at the Midwick Country Club, some 20 minutes' drive from downtown Los Angeles. Aside from the winner of the Bostick Cup, who will have his name engraved on the big bowl for posterity to gaze at in awe, as well as receiving a smaller replica, adequate and suitable prizes and awards have been provided for the less skilled brethren. A buffet supper has been planned for the nineteenth hole which is promised to be a fitting climax to an afternoon spent in wandering over grassy dales in Southern California's famed sunshine (and smudge smoke). All golfers are urgently requested to register at the Biltmore Hotel for the tournament as soon as possible after their arrival.

References to the program of this year's meeting will show the titles of the papers to be presented, together with their authors. In 1923, papers were presented by A. C. McLaughlin, W. A. English, and W. S. W. Kew, among the fraternity of local geologists, as well as by Joseph Jensen, R. M. Barnes, and R. E. Collom. R. P. McLaughlin was chairman of the general committee of the convention at that time.

In 1928, papers were presented by W. A. English, R. M. Barnes, Stanley Herold, F. W. Hertel, G. D. Hanna, Ralph Arnold, Wayne Loel, Earl Wagy, Joseph Jensen, Austin Cadle, Leo S. Fox, G. D. Robertson, H. W. Hoots, W. W. Copp, A. J. Tieje, Paul Goudkof, G. H. Doane, and S. G. Wissler. G. C. Gester was president of the Association at the time.

It may be of interest to compare this list of names with those appearing as authors of papers to be presented at the 1937 meeting.

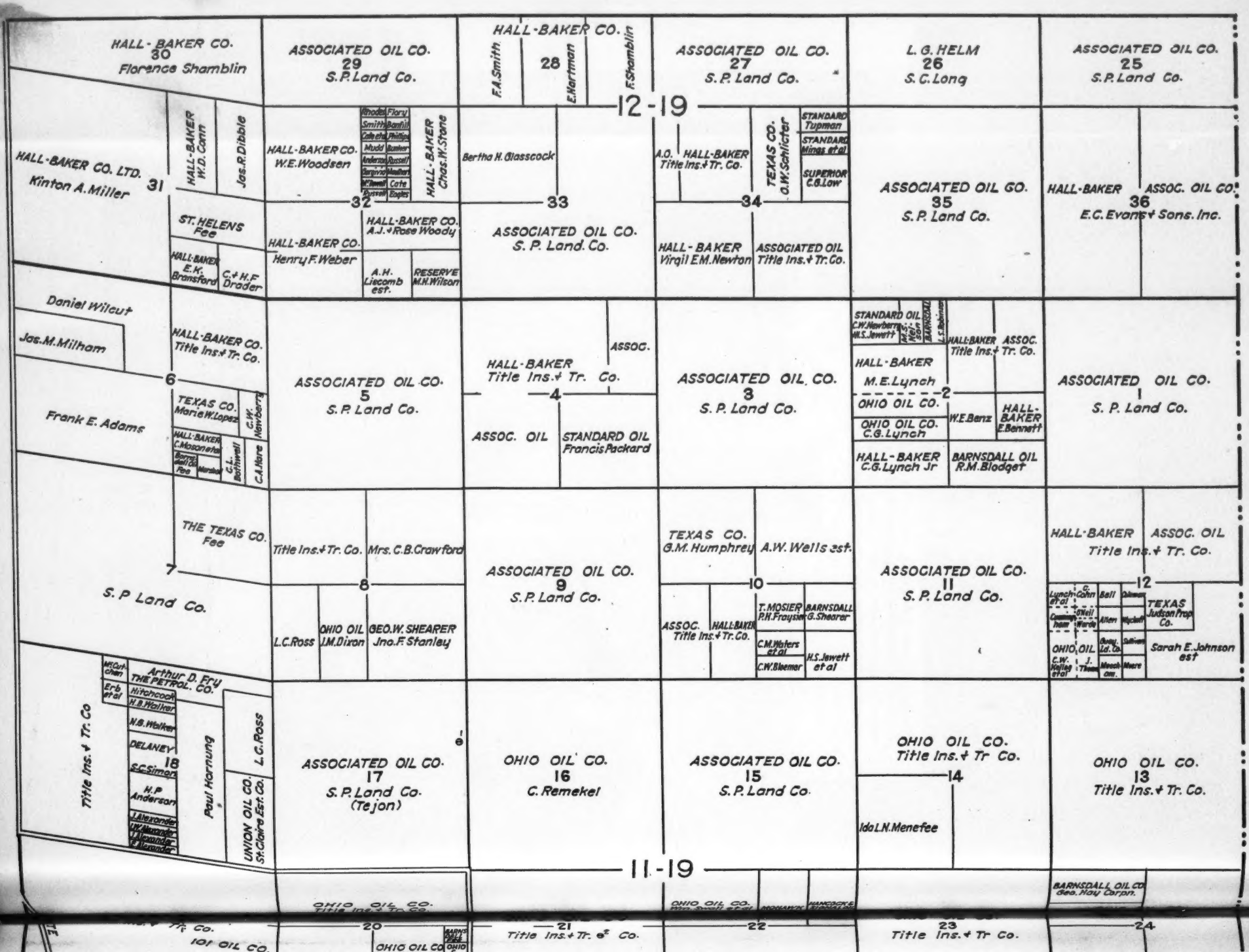
Group picture taken at the home of C. D. Clark, Santa Fe Springs, of the A.A.P.G. convention in 1923.

At Los Angeles ...

STUDY THE RIEBER SONOGRAPH SYSTEM OF GEOPHYSICAL EXPLORATION . . .

Members of the American Association of Petroleum Geologists, scientific society members, and friends attending the annual Convention in Los Angeles are invited to visit an exhibit of the RIEBER SONOGRAPH SYSTEM at our booth in the Biltmore Hotel.

Members of our Laboratory staff will be in attendance to discuss this newest of geophysical methods, and to show its applicability to the various exploration problems now confronting the petroleum industry.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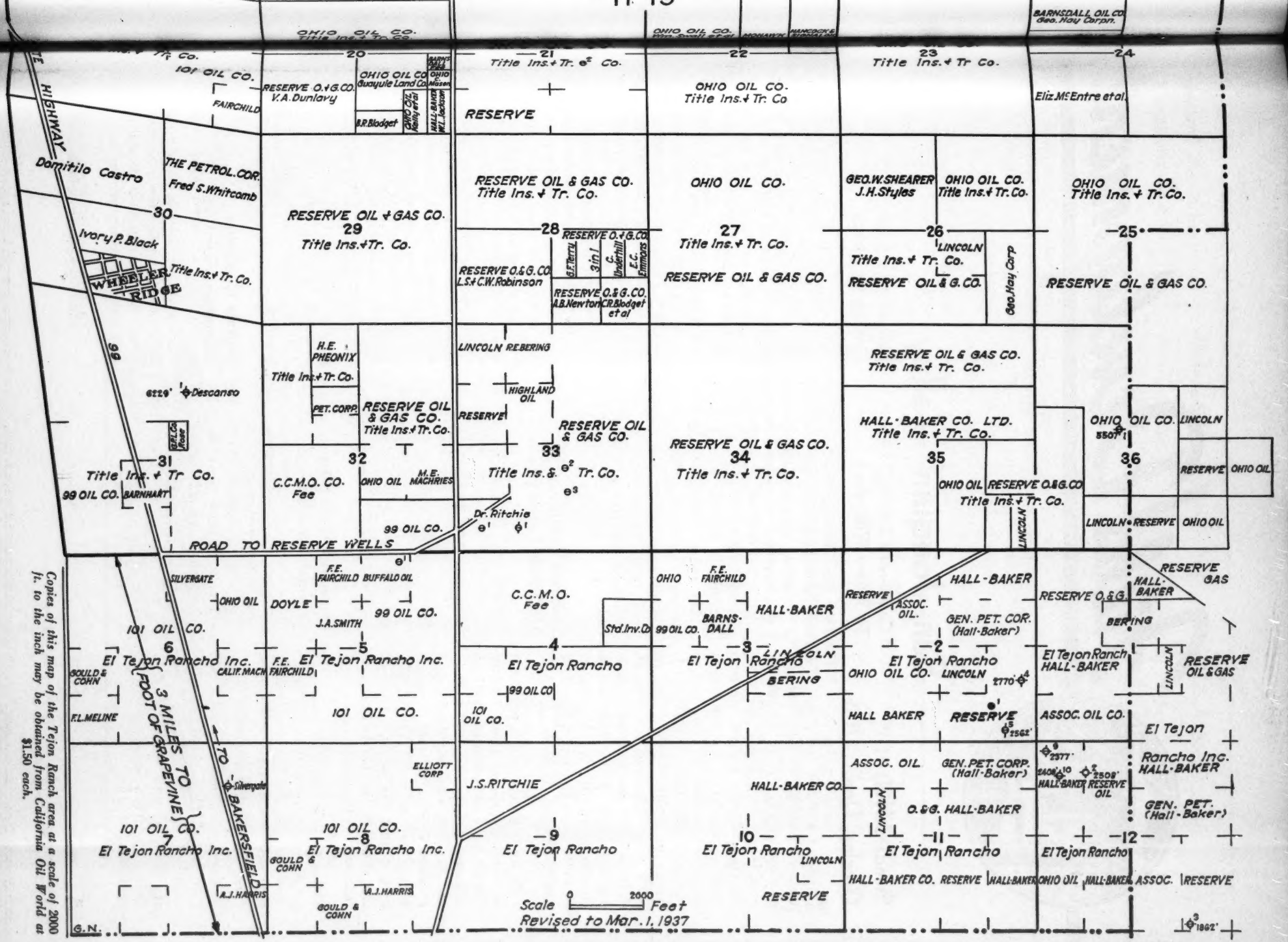
Copies of this map of the Tejon Ranch area at a scale of 2000 ft. to the inch may be obtained from California Oil World at $1.50 each.
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GEN. PET. (Hall-Baker)
Scale 0 2000 Feet
Revised to Mar. 1, 1937
G. N.

Field Development

San Joaquin Valley

Standard KCL 11-2, Greeley, Down 7700

Standard Oil Co., KCL No. 11-2, located in sec. 20, 29-26, to the east of the discovery well in the Greeley area, is now below 7700 ft. and nearing the productive horizon. An electrical coring device was run and is reported to have shown the well to be higher structurally than No. 11-1, which has a total depth of 7807 ft. with water shut off at 7738 ft. Standard now has four active drilling operations in the area, and is rigging up another, No. 11-4, located to the south and east of Nos. 11-2 and 11-3, in sec. 20, 29-26.

Late field reports, which could not be verified, indicate that Standard Oil Co. No. 12-1, located nearly a mile south of the discovery well, in sec. 30, 29-26, went into the oil sand at about 7550 ft. If this is true it would tend to verify the popular opinion that the major portion of the structure lies to the south or southeast of the discovery.

Union Oil Co. has foundations in for Kernco No. 4-1, in the Rio Bravo area, sec. 23, 29-25, approximately four miles northwest of the discovery, and will drill immediately.

Mohawk Petroleum Corp. KCL No. 1, in sec. 23, 29-25, about two miles west and to the south of the Standard discovery well, was spudded in Feb. 27, and has surface casing cemented at 1150 ft.

Continental Fishing In Wasco Wildcat

Drill pipe, stuck at 9303 ft. in Continental Oil Co. KCL No. A-1, deep wildcat near Wasco, while hole was being reamed to set casing for a production test of showings encountered near bottom at 9545 ft., has been cemented in place to act as a water string, and a small bailer rigged for the test. After recovering considerable gas-cut mud and some oil, the bailer was lost in the hole. Attempts are now being made to recover.

Standard Completes McDonald Island Gasser

Another well has been brought in by Standard Oil in the McDonald Island gas field, San Joaquin county. Production test was made Feb. 27 and showed a rating of 24,560,000 c.f. Well was then shut in. Bottom of the hole is at 5312 ft., with shutoff at 5179 ft.

Three New Wells Start At North Belridge

Three new drilling operations will soon be under way in North Belridge. Continental Oil Co. has rig up for Result No. 9 in sec. 36, 27-20, Tidewater-Associated Oil Co. is building rig for Reward No. 6, in the ne¼ sec. 34, 27-20, and foundations are in for Belridge Oil Co. No. 3 in sec 27, 27-20.

Reserve 33-2 Swabs, Flowing By Heads

Latest reports from the field indicate that Reserve Oil and Gas No. 33-2, in the Tejon Ranch area, is flowing by heads at half-hour intervals ,making anywhere from 200 to 500 bbls. per day.

The well is being swabbed, with 6⅝-inch casing set at 4438 ft., the well having been redrilled to 4468 ft. Some sand is being pulled into the hole. The well is on sec. 33, 11-19.

The first production test, with bottom at 4505 ft., was inconclusive because of mechanical difficulties. No. 33-3 continues to stand shut in after showing all gas on a series of tests recently completed.

Ohio Oil Co. No. D-1, two miles north of the Reserve wells, which showed some oil when swabbed with zone open from 6637 to 6662 ft., is being deepened at 6637 ft., formation being predominately shale.

Work has been resumed on Buffalo Oil Co. Tejon No. 1, in sec. 5, 10-19, and hole is being deepened below 4280 ft. Some showings have been reported.

Buffalo Completes Mountain View Well

Buffalo Oil Co. Buffalo No. 6, sec. 19, 30-29, Mountain View, was completed Mar. 2 from 4880 ft., and is now making 350 bbls. per day.

Standard Abandons 10 Sections Test

Standard Oil Co. KCL 8, which was put down about three miles south and west of the Shell Oil Co. discovery well in Ten Sections, in sec. 34, 30-26, has been abandoned. Originally drilled to 8915 ft. a series of unsuccessful production tests were made of showings encountered below 8160 ft.

Having successfully completed KCL A-34 for a potential of 2724 bbls., Shell Oil Co. has started two new projects in the field, KCL A-23 in sec. 30, 36-26, and KCL A-58 in sec. 29, 30-26. Rig is also up for an extension test more than three miles northwest of the present productive area, known as Canal 21-14. Location falls in the nw¼ sec. 14, 30-25.

Amerada Makes New Rio Bravo Location

Another location has been made by Amerada Petroleum Corp. on the Drouin lease in the Rio Bravo gas field, Solano county, where the company recently completed a good well. Known as Drouin 2-5, it is located approximately one half mile north of No. 1, in sec. 25, 4n-2e (projected.)

Amerada Petroleum Corp. Mayhood No. 1, in the same area was spudded Feb. 23, and is now drilling ahead below 3600 ft.

Superior To Drill New Valley Wildcat

A wildcat will be drilled by Superior Oil Co. 3½ miles east of Bakersfield and north of the highway. Known as Chrome Community No. 1, it is located 565 north and 615 ft. east of the w¼ cor. sec. 36, 29s-28e.

Wildcat Drilling North Of Tulare Lake Area

A wildcat test, Teeter No. 1, is being drilled by Glenn Stone of Los Angeles, in sec. 25, 20-20 north of Tulare Lake in Kings county.

Midway-Sunset Active

Midway-Sunset continues to be one of the most active in the state. Recent completions include: Otis Hoyt Maricopa No. 5, which was brought in from 2027 ft. for 150 bbls. of 13.5 gravity oil, cutting 18.0% on Mar. 1; Gibson Oil Co. O'Brien No. 4, completed Feb. 28, now pumping 150 bbls. of 23 gravity oil cutting 15.0%; Oil, Inc., No. 0-3, pumping to sump about 180 bbls. per day of 14 gravity oil cutting 8.0%.

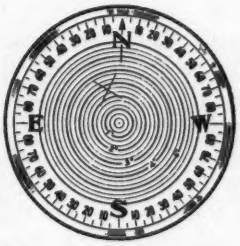
Taft C.N.G.A. Meets

With 60 members and guests in attendance, the Taft Chapter of the C. N. G. A. heard J. R. MacGregor, of the Standard Oil Co., present an illustrated paper on "Fuels for Diesel Equipment", describing the interrelation of engine design and fuel. Ralph Kokjer gave a talk on "Individual Income Tax Under the Revenue Act of 1936". Both talks were followed by discussion.

Underground Survey Instruments .....for All Drilling Conditions

ANDERSON PHOTO-RECORD MAGNETIC SINGLE-SHOT SURVEY INSTRUMENTS

Run on sand line or piano wire for measuring both Direction and Inclination in open hole. Sizes from 3¼" to 1¼" O. D. Large size shown to left; send for Bulletin No. 11 for complete description.

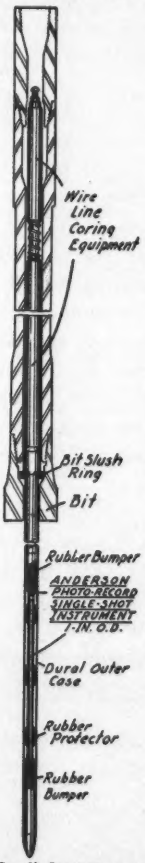


Above: A 5° Record taken with 3¼" O. D. Instrument. Read direct for both Direction and Inclination.

Right: A 4° Record taken with 1¼" O. D. Instrument. Direction read with Anderson Reader.

WITH WIRE LINE CORING EQUIPMENT

You can keep up your survey for both Direction and Inclination without pulling the tools by using the small Photo-Record single shot with wire line coring equipment as illustrated to the right. *Send for Bulletin No. 12 for details.*



Small Instrument used with wire line coring equipment.

Providing Photographic Records on Metal Rimmed Discs and Equipped with Interchangeable Inclination Units.

ANDERSON PHOTO-RECORD GO-DEVIL

For measuring Inclination only, the Anderson Go-Devil can be dropped into the drill pipe; or it can be run in on piano wire when more than one reading is desired before pulling out the tools.

Equipped with either Basket Guide Spring as shown to right or with Expansible Fingers.

A 4° Go-Devil Record

ALEXANDER ANDERSON, INC.
FULLERTON, CALIFORNIA, U. S. A.
Surveyors of Oil Wells Since 1924
Complete Direction Control of Drilling Wells

Los Angeles Basin

El Segundo Productive Limits Not Established

Recent developments in the El Segundo area tend to demonstrate that the productive limits of the field have by no means been established. When Union Oil Co. El Segundo No. 1 and The Texas Co. Johnson No. 2-1, southeasterly outpost tests of the field, both failed to encounter the top of the nodular shale after reaching depths of 7600 ft., whereas completion depths of wells a short distance to the north and west were only a few feet below 7300, many were of the opinion that these wells were definitely off structure and that there was little hope of an extension of the field in this direction.

However, the nodular was encountered in the Union Oil test at 7630 ft., and the top of the conglomerate-oil sand was found at 7658 ft. Drilling was stopped at 7685 ft. to set casing, formation at present bottom being oil sand. The sand is reported to be well saturated, and to give every indication that good production will be obtained. The Texas Co. found the top of the nodular at 7670 ft., and the oil sand at 7695 ft. Cores from 7695 ft. to 7737 ft. showed well-saturated oil sand. The formation from 7737 to 7750 ft. gave a fair oil cut, but from 7750 ft. to bottom at 7756 ft. the sand was gray and looked as if it might contain water. The hole is being bridged back and a formation tester will be run. It is considered probable that a fair producer can be obtained, but edge conditions are indicated.

There have been two completions of recent date, with more soon to come. Ohio Oil Co. Gough No. 2 was brought in Feb. 22 from 7341 ft., flowing 235 bbls. of 28.2 gravity oil per day, showing a total cut of 2%. At the present time, the well is making 247 bbls. per day. Richfield Oil Co. El Segundo No. 2, depth 7319 ft., was completed on Feb. 26, with an initial production of 727 bbls. of 28 gravity, clean oil per day. Present production is 717 bbls. per day.

Work is underway on three new operations. Rig is up for Ohio Gough No. 3, to be drilled one location north of Gough No. 2. Rig site is being graded for Richfield Oil Co. Santa Fe No. 1, on property recently acquired from the Santa Fe Railroad, and Republic Petroleum Co. has made location for El Segundo No. 6, east of present production in sec. 18. At the present time there are 10 drilling operations in the field, with six wells on production.

Barnsdall Deepening Saugus Wildcat

Barnsdall Oil Co. Rancho San Francisco No. 1, wildcat test west of Saugus, is being deepened. Last report showed a depth of 6371 ft. in oil sand and shale. Complete details of the production test at 6276 ft., which caused considerable speculation and excitement, have never been divulged by the company. However, the consensus of opinion seems to be that the well did produce considerable oil or condensate, and several million feet of gas on various production tests made, but that tests were not conclusive, due to the small amount of zone open, and to the fact that the high-pressure gas zone, being present directly below the shoe of the casing, interfered with attempts to produce the oil horizon below. It is probable that when further tests are made the gas sand will be cased off.

On the strength of the showing made by the Barnsdall test, work has been resumed on Holbrook Petroleum Co. Broughton No. 1, a wildcat located approximately four miles to the east, in sec. 28, 4n-16w.

Wilmington Activity Still On Increase

Activity in the Wilmington area continues to increase. A recent count showed 20 active drilling operations, seven wells preparing to spud, and rigs up, foundations in or piling driven for 15 more. At the present time the field may be roughly divided into three areas, all of which are undoubtedly part of the same structure, and which eventually will be joined.

The area to the north of Anaheim Road, which has been developed principally by Bankline Oil Co., shows production yields of from two to four hundred barrels per well. The most active portion of the field is in the townlot area south of Anaheim Road, and west of the Terminal property controlled by General Petroleum Corp. Here completions of from three to five hundred barrels are common. The third area includes the acreage surrounding the discovery well, largely held by General Petroleum. The two wells completed here to date have shown a combined potential of more than 3000 bbls. Wells now being drilled on the Ford Motor Co. property and on the Union Pacific property should give a good picture of the ultimate possibilities of the field.

Hogan To Drill West Of Coyote

Hogan Petroleum Co. is preparing to drill a wildcat on the McNally Ranch, approximately one mile west of the West Coyote field. Steel derrick has been erected on the northwest quarter of sec. 23, 3s-11w.

The area to be tested in an interesting one, the nearest hole having been drilled about one-half mile to the east by the Amalgamated Oil Co. some years ago, and abandoned at a depth of approximately 4200 ft.

Coastal District

Field Continental 1, Gato Ridge, Deepening

O. C. Field Gasoline Corp. Continental No. 1, sec. 4, 8n-32w, in the Gato Ridge area, failed to produce on tests at 2812 ft. due to heaving sand and shale, and is being deepened below 2860 ft. Moyle Petroleum Co. No. 1, in the same section, was spudded Feb. 24, and is drilling below 1100 ft.

Next completion in the field should be Barnsdall Oil Co. Tognazzini No. 9. Pumping equipment has been installed, and test will be made immediately. Bottom of the hole is at 2465 ft., with 740 ft. of zone below the shutoff.

Barnsdall Oil Co. Tognazzini No. 6, and The Petrol Corp. Tognazzini No. 3A, both in sec. 9, 8n-32w, are being rigged up and will be drilled immediately.

Macrate Adam Well Making 400 Bbls. Daily

A. N. Macrate Fernandez No. 1, southwesterly test of the Adam field in sec. 26, 10-34, which was completed Feb. 17, pumping at the rate of 700 bbls. per day, has settled down to 400 bbls. per day of 15.9 gravity oil showing a 1.0% cut. The well was allowed to produce until storage was filled, and then was shut in.

The only other active wells in the field at the present time are Union Oil Co., Adam No. 2 and R. R. Bush Oil Co. Hopkins No. 1, both of which are in the oil zone and nearing completion.

Moore Wildcat Near Santa Maria Idle

E. H. Moore Union Sugar Co. No. 1A, deep wildcat southwest of Santa Maria in sec. 25, 10n-35w, is idle at 8127 ft.

Union Quits Huasna Well

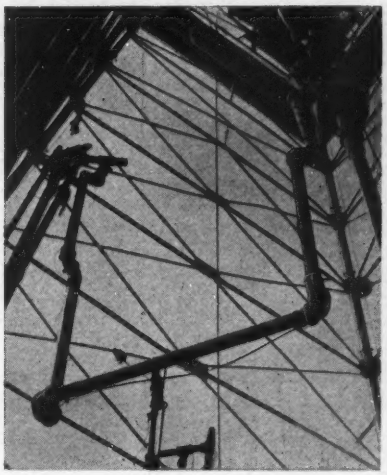
Union Oil Co. Porter No. 1, sec. 22, 32-13, in the Huasna Valley, San Luis Obispo county, is being abandoned. Hole was drilled to 5010 without important showings. This marks the end, for the time being at least, of persistent efforts by this company to secure production in the area.

1 Active Well, Four Locations, At Capitan

Shell Oil Co. has one active well in the Capitan area, Covarrubias No. 1-23, which has been drilled to 1227 ft. in oil sand, with 8⅝-inch casing cemented at that depth. Locations have been staked for four additional wells in the area.

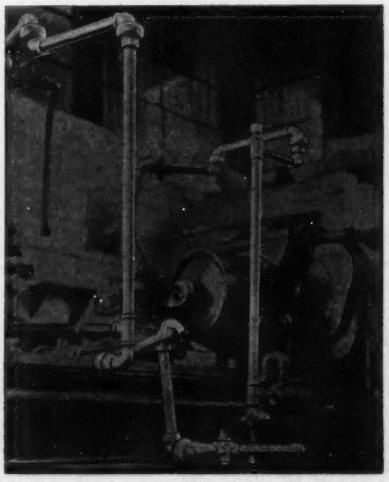
THE *Swing* IS TO CHIKSAN

WORK IN SAFETY WITH TODAYS MOST MODERN ROTARY HOSE



- The amazing flexibility of the Chiksan All Steel Rotary Hose is due to its seven joints and 17 movements which allow perfect 360 degree "swing". Two rows of ball bearings on each swivel add greatly to the strength and performance of this hose. The patented packing unit provides—positive seal, minimum amount of friction, and eliminates leakage problems.
- Low pressure swing joints in ¾" and 1" sizes are now available for lathe tools and any other place where free swiveling, non-leaking metal joints are required.

Our engineers will be glad to make recommendations.



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Get a Chiksan Hose and cut costs by using it both for ordinary drilling and "pressure drilling. It is unaffected by oil. It is not damaged by sudden surging pressures. It has a positive safety factor under all drilling conditions. Chiksan Hose is ordinarily good for 50,000 to 100,000 feet of hole. You can't beat a Chiksan for **Safety, Flexibility and Economy.**

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STATE DRILLING REPORT

Field	Company		Well No.	Sec.	Twp.	Range
		NEW WELLS				
Seal Beach	Tide Water Assoc. Oil Co.	Bryant	16	11	5S	12W
Domingues	Union Oil Co.	Heilman	46	33	3S	13W
Playa Del Rey	Union Oil Co.	Del Rey	17	27	2S	15W
Richfield	Union Oil Co.	Chapman	43. 44. 45	29	3S	9W
	Principal Oil Corp.		1	36	3S	9W
Wilmington	Geo. F. Getty, Inc.		W 4 & 6	33	4S	13W
	Union Pacific R. R.	Offset	2, 3, 5, 7	4	5S	13W
	Union Pacific R. R.	Offset	6, 8	33	4S	13W
	A. T. Jergins Trust		1, 2, 3, 7, 8	34	4S	13W
	Royalty Service Corp.		22–7–1	33	4S	13W
	F. C. Hall, Inc.		20–7–1	33	4S	13W
	Wilmington Oil Develop. Co.	Community	1	33	4S	13W
	Bankline Oil Co.	Tutor	1	33	4S	13W
	Gen. Pet. Corp.	Ford	1 & 2	4	5S	13W
Coyote Hills	Bandini Pet. Co.	Bowen	1	24	3S	10W
	Standard Oil Co.	Emery	63	24	3S	11W
Santa Paula	Frank E. Arnett		3	15	4N	21W
Ventura	Tide Water Assoc.	Lloyd	29 & 64	27	3N	23W
	Tide Water Assoc.	Lloyd	66	26	3N	23W
Rincon	Continental Oil Co.	Hobson	3	15	3N	24W
	C. C. M. O. Co.	Hobson	A-5	15	3N	24W
	C. C. M. O. Co.	Hobson	B-13	8	3N	24W
Capitan	Shell Oil Co.	Covarrubias	1–23	32	5N	30W
	Gen. Pet. Corp.	Erburu	17 & 18	32	5N	30W
Cat Canyon	Barnsdall Oil Co.	Tognassini	6	9	8N	32W
	Moyle Pet. Co.	Arata	1	4	8N	32W
Midway	Quality Oil Co.	W. P.	2	27	32S	23E
	Honolulu Oil Corp.		36	14	32S	24E
	Tide Water Assoc.		31	35	31S	22E
	Holly Development Co.	Evans	1	15	32S	23E
	Standard Oil Co.		7	33	32S	24E
	Midcrude Pet. Corp.		2	22	32S	23E
	Union Oil Co.	Keene	5	22	32S	23E
	Union Oil Co.	Williams	5	22	32S	23E
McKittrick	Welport Oil Co.		17	26	29S	21E
	Albert S. Clore	Laymance	2	20	30S	22E
Poso Creek	Roscoe & Stanley	N. H.	3	29	27S	27E
	Bojaki Oil Co.	Bowen	1	28	27S	27E
	Standard Oil Co.		4	9	28S	27E
Kern County	Mohawk Petroleum Co.	KCL	1	23	29S	25E
	Pet. Sec. Co.	Wright	1	23	29S	25E
	Bear Mountain Oil Co.	Tejon	1	21	31S	30E
	Standard Oil Co.	KCL 11	3	20	29S	26E
Fruitvale	Western Gulf Oil Co.	West	2	21	29S	27E
	I. J. Banducci	Tichurst	2	26	29S	27E
	Edward Gieck	Greeley	1	23	29S	27E
Kern River	Italo Pet. Corp.	Newhouse	1	17	28S	27E
	M. H. Whittier Co.	Cauley	4	16	28S	27E
	Seskayden Oil Co.	Sesson	4-A	17	28S	27E
	Thomas W. McManus		3	2	29S	28E
Mountain View	Trico Oil & Gas Co.	Wilson	2	13	30S	28E
Round Mountain	Honolulu Oil Corp.		65	18	28S	29E
	Calif. Western Oil Co.		2	12	28S	28E
Kettleman—North	Standard Oil Co.		81	33	21S	17E
	Kenda		56	28	21S	17E
Kings County	Glen G. Stone	Teeter	1	25	20S	20E
Mount Poso	Ring Oil Co.	Knapp	3	28	26S	28E
Tehama County	E. F. Stella	Johnson	2	30	23N	3W
Huntington Beach	Richrow Corp.	Severns	1-A	10	6S	11W
	W. E. McCaslin		2	2	6S	11W
Santa Maria Valley	Union Oil Co.	O'Donnell	1	21	10N	34W
	Union Oil Co.	Vincent	2	30	10N	33W
Semitropic	Seaboard Oil Corp.	KCL	C-1	26	27S	24E
Newhall	A. G. Burt		1	36	4N	17W
Sunset	Otis Hoyt	Maricopa	5	7	11N	23W
	R and W Co.	Francis	6	6	11N	23W
	Berry Holding Co.	Hillside	21	34	12N	24W
Lost Hills	Standard Oil Co.	United	3	2	26S	20E
		DEEPEN OR REDRILL				
Huntington Beach	D. D. Dunlap		2	2	6S	11W
	Standard Oil Co.	Schumacher	3	34	5S	11W
	Wilshire Oil Co.		17	10	6S	11W
	Cordova Oil Co.	Wardlow	1	2	6S	11W
	Chas. W. Camp	Laughlin	2	10	6S	11W
	Southern Calif. Drilling Co.		1	2	6S	11W
Long Beach	A. T. Jergins Synd.		1	29	4S	12W
	Stanton Oil Co.	Hoyt.	3	19	4S	12W
	Coast View Oil Co.	Calmont	4	19	4S	12W
	Exeter Oil Co.		3	30	4S	12W
	Morton & Elder	Ness	2	29	4S	12W
Playa Del Rey	Royalty Service Corp.	Herndon Dev.	29	27	2S	15W
Brea-Olinda	C. C. M. O. Co.		33–51–70	8	3S	9W
Seal Beach	Continental Oil Co.	McGrath	22 & 25	3	5S	12W
Coyote Hills	Standard Oil Co.	Coyote 2	8	22	3S	10W
	West American Oil Co.		13	24	3S	10W
	Chilean Oil Co.	Lemke	2	19	3S	10W
Santa Fe Springs	Union Oil Co.	Bell	84	31	2S	11W
Inglewood	Kettleman & Inglewood Corp.	Rubel	11	8	2S	14W
Ventura	Shell Oil Co.	Gosnell	14	28	3N	23W
	Shell Oil Co.	Taylor	85	29	3N	23W
Elwood	Barnsdall Oil Co.	Luton-Bell	19	15	4N	29W
Devil's Den	Gibson Oil Co.	Alferitz	2	14	25S	18E
Midway	Standard Oil Co.		9 & 55	33	32S	24E
	Standard Oil Co.		67	7	32S	24E
Kettleman N. D.	Tidewater Assoc. Oil	Whepley	3	35	21S	17E
	Kenda		65	30	21S	17E
Kettleman M. D.	Temblor Oil Co.	Bunting	1	25	23S	18E
Sunset	Joseph McDonald		1	6	11N	23W
	Crescent Pet. Co.		30	1	11N	24W
Fruitvale	Elbee Pet. Co.	Bitner	1	25	29S	27E
	Western Gulf Oil Co.	Bitner	1	21	29S	27E
Coalinga	J. C. Ferguson	Guthrey	4	31	19S	15E
Kern River	Cox Brothers		1	32	28S	28E
Poso Creek	Tide Water Assoc.		3	4	28S	27E
		ABANDON				
Long Beach	Wood-Callahan Oil Co.		4	13	4S	13W
	Transport Oil Co.		15	13	4S	13W
	Richfield Oil Co.	Barry	1-A	20	4S	12W
	Davis Investment Co.		9	29	4S	12W
Torrance	Imperial Gypsum & Oil Co.	McDowell	1	35	3S	14W
Huntington Beach	R. O. & W. Oil Co.	Coogan	5	2	6S	11W
	The Texas Co.	Talbert	1	10	6S	11W
Santa Fe Springs	Sibert Pet. Co.	Wolfskill	1	31	2S	11W
	Ring Oil Co.	Baker	2	6	3S	11W
Richfield	West Coast Rfg. Co.	Yorba Comm.	1	25	3S	9W
Piru	Tide Water Assoc.	Wiley Canyon	1	6	3S	18W
Bardsdale	Besteo Pet. Co.	Frey	1	2	3S	19W
San Luis Obispo Co.	Union Oil Co.	Porter	1	22	32S	15E
Tulare County	Trico Oil & Gas Co.	Callison	1	27	21S	25E
	Seaboard Oil Corp.	Security	1	16	23S	26E
Mountain View	Trico Oil & Gas Co.	Wilson	1	13	30S	28E
Coalinga	Tide Water Assoc.	National	2, 3, 30	22	19S	15E
	Tide Water Assoc.	Guardian	3	2	20S	15E
	Tide Water Assoc.	Marian	1	6	21S	15E
	Tide Water Assoc.		1-A & 5-D	18	20S	15E
	Tide Water Assoc.	R. H. Smith	8	7	20S	15E
	Tide Water Assoc.	Shawmut	21	12	20S	14E
Colusa County	Smith & Vickers		1	32	15N	4W
Kern County	J. A. Kibels		1	32	25S	17E
Kern River	National Oil Co.	Gates	4	2	28S	27E
Edison	Berry Holding Co.	Grayson	4	10	30S	29E
Kettleman N. D.	Standard Oil Co.		54	1	23S	18E
Kettleman M. D.	Bolsa Chica Oil Corp.	Downing	30–1	30	23S	19E

Summary	Last Three Weeks	Previous Two Weeks	To Date This Year	To Date Last Year
Total New Wells	82	51	223	149
Total Deepened or Redrilled	37	25	113	129
Total Abandoned	31	20	89	72

California Crude Oil Production

From February 6 to February 26, 1937

Field	February Daily Quota	Average Daily Production	Excess
San Joaquin Valley			
Belridge—North	12,570	15,870	3,300
Belridge—South	1,965	1,818	*147
Buena Vista	16,880	15,296	*1,584
Coalinga—East	11,650	9,010	*2,640
Coalinga—West	5,320	5,245	*75
Coffee Canyon	5,315	5,348	33
Edison	4,865	4,949	84
Elk Hills	8,030	8,799	769
Fruitvale	8,280	8,398	118
Greeley	445	442	*3
Kern Front	10,375	10,012	*363
Kern River	3,645	2,355	*1,290
Kettleman No. Dome	77,150	78,398	1,248
Lake View	3,220	12,672	9,452
Lost Hills	4,210	3,878	*332
McKittrick	3,660	1,536	*2,124
Midway-Maricopa	35,465	37,655	2,190
Mount Poso	15,745	17,220	1,475
Mountain View	20,505	20,912	407
Round Mountain	6,955	6,463	*492
Ten Section	655	1,203	548
Other Fields	3,040	2,925	*115
TOTALS	259,945	270,404	10,459
Coastal District			
Elwood	9,670	9,410	*260
Rincon	1,865	2,552	687
Santa Maria	5,945	5,339	*606
Santa Paula-Newhall	4,335	5,104	769
Ventura Avenue	29,870	33,456	3,586
Other Fields	4,475	4,976	501
TOTALS	56,160	60,837	4,677
Los Angeles Basin			
Alamitos Heights	1,485	1,657	172
Brea-Olinda	7,920	7,899	*21
Coyote—East	2,370	3,083	713
Coyote—West	7,720	7,796	76
Domingues	23,075	24,552	1,477
El Segundo	585	2,019	1,434
Huntington Beach—New	18,450	20,738	2,288
Huntington Beach—Old	14,260	17,090	2,830
Inglewood	12,935	13,085	150
Long Beach	59,195	61,778	2,583
Montebello-Extension	8,385	9,666	1,281
Playa Del Rey	10,190	9,789	*401
Richfield	7,170	7,161	*9
Rosecrans-Athens	1,965	2,097	132
Santa Fe Springs	41,050	43,884	2,834
Seal Beach	7,265	7,329	64
Torrance-Hermosa and Extension	7,250	7,861	611
Wilmington	1,295	4,813	3,518
Other Fields	2,155	2,289	134
TOTALS	234,720	254,586	19,866
STATE TOTALS	551,000	585,827	34,827

*—Shortage.

Bandini To Drill East Coyote Well

Bandini Petroleum Co. is preparing to drill another well in the East Coyote district. Known as Bowen No. 1, it is located near the center of sec. 24, 3s-10w. Kammerdiner No. 1, in sec. 17, 3s-9w, was recently completed by the company for approximately 150 bbls.

Doherty Takes Redondo Lease

The Doherty Oil Co. of Redondo has taken over a small lease in the Redondo field and is rigging up to drill. The well is located near the northeast corner of Block 127 of the Redondo Villa Tract.

YOUNGSTOWN

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THE YOUNGSTOWN STEEL PRODUCTS CO., Dashwood House, Old Broad Street, London, E. C. 2, England

LAUGH THIS OFF

It was at the conclusion of a recent local A.P.I. meeting that some of the boys were having an informal chat, and the subject of reading came up for discussion. "Do you like O. Henry?" asked **Percy Morton,** and **Dick Hoover** replied, "Naw, the nuts get in my teeth."

And **Chet Yunker** tells about a rousty who bought himself a new watch of which he was very proud. Late in the afternoon he looked at the infallible time piece and, with a shake of his head remarked, "Well, sir, if the sun ain't down behind that hill in a minute and a half, it's gonna be late."

A group of oil workers were drilling a well up in the Bakersfield district, and the location was just across the street from a melon patch. The temptation was so great that the boys couldn't resist, and finally one of them ran over to see if the melons were ripe. On the way he was knocked down and killed by an automobile. **Pat Tracy** was giving the sordid details of this story to a buddy up in Maricopa, and when he got all through his audience sympathetically inquired, "Is that so? Did you hear if the melons were ripe?"

Jack Gordinier, the well known race horse owner of Dominguez, says that his new bangtail "Flashinpan" is so spirited it is always trying to break into a decanter.

And **Bob Patterson** recites the tale of an unknown operator who drilled a well up in Midway with a Roman nose.

Then there was **Jack Maddux'** friend who joined the 85th regiment to be near a buddy who was in the 86th.

"Your boss is a swell guy, and you can't do too much for him," said **Cliff Weaver,** and the rousty replied, "Don't worry, I ain't goin' to."

And a California paper said during the hunting season that "a fine deer was shot by **Shorty Tate** weighing 340 pounds."

A Long Beach dealer is advertising for the trade "quart cans in all sizes."

And **Doc Wilson,** who maintains the health of many oil workers at a high standard, says, "That swelling on the back of your neck is getting bad, you'd better watch it."

"That's my horse," says **Tom Pike** with evident pride to the members of his party out at Santa Anita, "See how he drives the rest before him."

"The boss is occupied," informed the snooty young secretary, and **Joe Gilliland** asked, "How soon do you think he'll be vacant?"

According to a recent report, the source of which we would rather not mention, "Lubricating crude oil predominates in the California fields, but light refining crude predominates even more, and heavy crude below 20° A.P.I. gravity predominates most of all."

And if we can believe **Ward Blodget** the following description of an accident was turned in by an observer, "The man fell from the top of the derrick and broke his neck but received no further damage."

Which reminds us of the underling who told the executive, "Be assured, sir, I shall lose no time in reading your report."

Joe Jensen is distinctly of the belief that a verbal agreement isn't worth the paper it's printed on.

And tells of a notice that is posted in the boiler house of a local plant. It reads as follows: "The whistle must only be blown in case of a visit from our executive officers, a fire, flood, earthquake, or other calamity."

The fish are so big down at Huntington Beach right now, says **Percy Munn,** that it doesn't take many of them to make a hundred.

Also we are glad to note that the petty thieves who were raising particular cain in a certain oil district have been arrested, and, as the local scribe puts it, "all the pumps have been recovered excepting a monkey wrench."

Neil Needham kicks through with some interesting material about a mass meeting of oil men that was called recently in one of the less populous oil centers. It was apparently a big success, as the morning paper informed its readers that "scattered through the hall were Bill Jones and Tom Stout."

And **Ray Warden** sends in this boarding house sign, "Rooms for oil men—large and airy."

With which few remarks we leave you to your own devices. Don't forget to pass a good word along when you get the chance. It's no use throwing flowers on a man's grave after he's dead.—R. S.

Quota Remains 551,000; Bureau Recommends Cut

On Central Committee basis, storage remained constant during January, in spite of 3,000,000-bbl. withdrawal shown by A. P. I. report.

While the A. P. I. monthly report showed a withdrawal of approximately 3,000,000 bbls. from total storage during January, the Bureau of Mines has recommended a lower production quota for the state, and the allowable set up by the Central Committee remains the same.

This apparent paradox is explained by the fact that both the Bureau of Mines and the Central Committee base their figures on gasoline alone, while the A. P. I. totals show all stocks. Even though the A. P. I. statistics show the above withdrawal, there was, during January, approximately 1,000,000 bbls. of gasoline put into storage, and gasoline, to make it comparable with crude, is figured on a 3-to-1 basis (one barrel of gasoline equals three barrels of refinable crude), so that with a withdrawal of 3,000,000 bbls. from other storage, and an addition of 1,000,000 bbls. to gasoline stocks, the Bureau of Mines and the Central Committee consider storage as having remained constant.

For the nation, the Bureau of Mines recommends an increase of 90,400 bbls. in production in March, with most of it going to Texas fields, followed by Louisiana, Oklahoma, Kansas, and New Mexico. California suffers the greatest decrease, 2400 bbls. daily.

Domestic Demand

This recommendation is based upon an estimated demand for 39,100,000 bbls. of gasoline during the month, which is 9% more than the actual demand for March, 1936. Domestic demand for 1936 showed an increase of 10.8% over 1935, which was due partially to the large increase in motor vehicle registrations (from 26,200,000 to 28,200,000), and partly to the continued upward trend of motor fuel demand per motor vehicle.

Exports of motor fuel for March have been estimated at 2,300,000 bbls., or 100,000 more than the estimate for February and 700,000 more than the abnormally low figure of March, 1936.

Stocks of finished and unfinished gasoline on Dec. 31 amounted to 62,885,000 bbls., an increase of 4,086,000 during the month. According to the A. P. I., stocks were further increased during January by about 6,000,000 bbls., making motor fuel stocks on Jan. 31 close to 69,000,000 bbls., compared with 62,754,000 on the same date in 1936. An increase of 3,100,000 has been anticipated for March of this year, which, if realized, will bring stocks up to about 72,000,000 bbls.

Gasoline Production.—Benzol and direct sales and losses of natural gasoline have been estimated as 850,000 bbls., making the estimated production of gasoline 43,650,000 bbls., of which California is alloted 6,050,000 bbls.

Crude Petroleum

Runs to stills. Natural gasoline consumption at refineries is estimated as 6.1% of the total gasoline required, or 2,660,000 bbls. The yield of straight-run and cracked gasoline is estimated as 43.59%, an increase of about 0.55% over the February estimate. The application of this yield to the estimated straight-run and cracked production of 40,990,000 bbls. gives 94,030,000 as the crude required at refineries.

Imports.—Runs of foreign crude have been estimated as 2,900,000 bbls., which, on a daily average basis, is slightly lower than that for February.

Exports, fuel, and losses.—Exports of crude have been estimated as 4,000,000 bbls., "fuel and losses" as 2,800,000.

RECOMMENDATORY LEVELS OF REQUIRED CRUDE OIL PRODUCTION BY STATES

(Daily averages in Barrels)

State	Forecast March 1937	Forecast February 1937
Texas	1,256,600	1,203,400
Oklahoma	590,700	581,900
California	570,900	573,300
Louisiana	240,000	225,100
Kansas	178,000	170,000
New Mexico	88,200	81,600
Pennsylvania	49,000	49,400
Wyoming	42,200	41,900
Michigan	30,300	29,400
Arkansas	28,500	28,500
Kentucky	16,500	16,300
Montana	14,600	14,700
New York	13,500	13,000
Illinois	12,900	12,700
Ohio	10,300	10,500
West Virginia	10,300	10,200
Colorado	4,300	4,500
Indiana	2,200	2,200
Total	3,159,000	3,068,600

Anderson Invites A. A. P. G. Visitors

Alexander Anderson, Inc., will exhibit oil well survey instruments, orienting devices, directional drilling bits and mills, and models of the Lewis knuckle joint and Kinzbach whipstock at the A. A. P. G. meeting at the Biltmore, the display to be under the direction of a petroleum engineer who will be able to discuss surveying and directional drilling problems with interested visitors.

The company is also inviting all who are interested to make an inspection of its plant at 243 East Whiting Ave., Fullerton, or its offices at Pasadena and Willow Sts., Long Beach, and 2808 Chester Ave., Bakersfield. The company's resident engineer at Santa Barbara, phone 241-76, will be glad to show visitors directional drilling and surveying operations in the coast fields.

Legislature Now In Session; 300 Bills Interest Oil Industry

The reopening of the California Legislature for the second half of the present session on Mar. 1 will find the legislators with some 4000 bills having been presented during the first half of the session, of which number the Oil Producers Agency has indicated approximately 300 as being of interest to the oil industry.

Probably of greatest interest are the measures to give a foundation for the development of tideland oil fields. There were 36 of these proposals, ranging from slant-hole drilling by independent operators or oil companies, on a competitive bid basis, to drilling from piers or groins or to the entrance of the state into the oil business. This latter method was suggested as possible either by the state's agreement with littoral land owners as to rentals and royalties, or by actual condemnation proceedings to permit the state, under eminent domain powers, to seize the littoral lands as a site from which the drilling could be done.

Next in importance to the oil industry were two bills proposing the imposition of a severance tax. One of these bills taxed all natural resources except gold and silver, and the other, all but fish and game.

State Tax Structure

Coupled with the severance tax is, of course, the whole tax structure of the state, which the legislators definitely are planning to disturb by changing the sales tax rate, or by lowering its tax-producing volume by various exemptions. The governor's budget estimate indicated that with present tax laws and the expected increase in revenues because of improving business conditions, the state would show a slight surplus at the end of the next biennium, in 1939. However, this was predicated on no changes in the tax structure now existing, and there have been numerous proposals to change the existing structure. Obviously, if the sales tax is to be weakened by exemptions or amendments, one of which lowers the rate from three to 2½%, other sources of revenue must be found to make up the difference. Among those other sources the severance tax will take a prominent place.

Other taxes of immediate and particular interest to the oil business are the various proposals having to do with the gasoline tax, and truck taxes, as well as the inclusion of diesel fuel under various plans to make it somewhat comparable with gasoline. Out of 27 measures having to do with the gasoline tax in one way or another, only one would lower the tax from three to two cents per gallon, in spite of the present surplus in the Highway Fund, and in spite of the fact that California gasoline sales are increasing in what seems to be an uninterrupted climb. None of the bills, on the other hand, proposes to increase the tax, and one memorializes Congress to remove the Federal levy. In great part, the proposals have to do with the administration of the tax, with six of them having diversion of the tax as their subject, and four of them aiming to include other fuels.

Other taxes in which amendments, additions, or changes are of greater or lesser interest to the oil industry include: bank and corporation taxes, truck taxes on a weight basis, gross receipts or gross income taxes, corporation income taxes, personal income taxes, and a number of others. In addition, there were several proposed changes in the administration of various taxes, as well as proposed exemptions and expenditures.

Employee Relations

On the general subject of employer and employee relations, the greatest mass of legislation had to do with various amendments and proposals affecting workmen's compensation, unemployment insurance, labor disputes, and working conditions. In the field of unemployment reserves, there is a proposal to divorce the California act from the Federal act so that it will stand even if the Federal law fails, and another proposal to cut out employee contributions to the fund. Recent trends in national labor legislation are, in general, followed in California proposals. Bills limiting hours of work to either 30 or 40, and days to five, per week have been introduced, while suggestions to increase the scope under which benefits are paid, as well as increasing the amount of payments under the Workmen's Compensation Act have been made.

Old age security bills in general propose either to increase the amount of monthly payments or to lower the age at which payments begin, or both. Obviously, if the age is lowered and the payments increased, the cost will be considerably higher, and may ultimately require the levying of additional taxes.

Many bills having to do with transportation have been introduced. These bills include truck taxation and regulation, and pipeline taxation and regulation. In the pipeline field, both gas and oil lines are declared to be common carriers in two bills, while two other bills would tax pipelines but exempt common carriers. The inference here is that, in order to avoid the tax, pipelines would become common carriers. In the field of truck transportation, proposals include the taxing of diesel fuel, various regulations as to compulsory inspection at stated intervals, regulation of the transportation of flammable materials, regulation of weights, and weight-length ratio, and the requirement for the

carrying of certain emergency equipment.

In addition to these bills, particular bills directly affecting the oil industry are given by author and number below, with an explanatory sentence indicating the subject matter of the bill. This material was prepared by the Oil Producers Agency.

More than 4000 bills presented during the first half of this session, with a number of them of extreme interest to the oil industry. Tideland drilling, severance taxes, labor relations, old age security, workmen's compensation, etc., point the trend of the legislators' minds.

Production, Refining

S.B. 46 (Wagy) Disposition royalties accruing to Federal government.

S.B. 802 (Seawell) Dissemination data—Department Natural Resources.

S.B. 986 (McBride) Charges maintence—Division of Oil and Gas.

A.B. 198 (Turner) Disposition royalties accruing to Federal government.

A.B. 1387 (Tenney) Time within which actions must be brought.

A.B. 1701 (Garibaldi) License for stationary machinery operators.

A.B. 1943 (Call) Criminal trespass on real property defined.

A.B. 2026 (Miller, G. P.) License & registration of professional engineers.

A.B. 2527 (Donihue) Duties Department Natural Resources. Skeleton bill.

A.B. 2676 (Patterson) Prohibits water pollution.

A.B. 2718 (Glick) Prohibits water pollution.

Marketing

S.B. 17 (Garrison) Defines "true" gallon for gasoline sales.

S.B. 907 (Garrison) Specifications fuel oil; regulates sale thereof.

S.B. 970 (Wagy) False representation of products sold; re-branding.

S.B. 971 (Wagy) Regulation sale of gasoline-price marks.

S.B. 1027 (Jesperson) Persons controlling source of supply not to sell retail.

A.B. 375 (Turner) License of wholesale lubricating oil dealers.

A.B. 376 (Turner) To define motor oil. Skeleton bill.

A.B. 377 (Turner) Regulates sale reclaimed motor oil.

A.B. 404 (Boyle) California Trade Commission; unfair competition.

A.B. 409 (Peyser) Prohibits unfair price discrimination.

A.B. 533 (Flint) Prohibits sale motor fuel containing poisonous compounds.

A.B. 553 (Cronin) Unfair trade practices; defines "costs."

A.B. 554 (Cronin) Unfair trade practices; maximum hours, minimum wages.

A.B. 1092 (Yorty) Unfair trade practices; maximum hours, minimum wages.

A.B. 1106 (Levey) Unfair practices; sales below cost.

A.B. 1107 (Levey) Prohibits price discrimination.

A.B. 1109 (Levey) Unfair practices; price discrimination.

A.B. 1887 (Turner) Defines motor oil; regulates sale.

A.B. 2040 (McMurray) Amends Unfair Practices Act. Skeleton bill.

A.B. 2271 (Levey) Defines additional acts constituting unfair trade practice.

A.B. 2272 (Cronin) Filing of open prices.

A.B. 2382 (Desmond) Prohibits manufacturer control more than 5 retail stores.

A.B. 2778 (Pelletier) Chain store tax. $1 to $500 per store per year.

A.B. 2779 (Pelletier) Prohibits 11 or more stores under one ownership.

Roads and Highways

S.B. 255 (McBride) "Sidewalks" included in definition of a highway.

S.B. 256 (McBride) Supervisors may include sidewalks in road construction.

S.B. 486 (Biggar) State highway system —all roads outside cities.

A.B. 1771 (Turner) Competitive bids—asphaltic & Portland cement concrete.

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LOS ANGELES, CALIFORNIA

California Production Report Shows Big North Belridge Wells

Two wells average 7170 bbls.; other fields far behind. Completions and new rigs on uptrend, with stocks and production showing decreases.

North Belridge, an unspectacular and more or less matter-of-course field about which very little is heard, was the scene of by far the two biggest wells completed during January, according to the A. P. I. final report, far surpassing the North Dome, about which there probably has been more said and written than any other field in California, or the newer fields of the state, El Segundo, Wilmington, Greeley, and 10 Section.

Two wells brought in during January in North Belridge averaged 7170 bbls. each in initial production, while five wells on the North Dome averaged 1080 bbls. initial, and the state as a whole averaged 581 bbls. from 75 oil wells. Without the North Belridge completions, January initial average production would have been just slightly more than 400 bbls., while December completions (61) averaged 626 bbls. per well.

Another feature of the report is that field activity in general is maintaining a definite uptrend. There were 124 rigs erected during the month, against a monthly average of 91 during 1936, 86 during 1935, and 53 during 1934. The 77 completions (two of them gassers) during January compared with an average of 67 during 1936, 64 during 1935, and 38 during 1934.

Production

Production during January averaged 581,666 bbls. per day, totalling 18,031,650 bbls. for the month, a decrease of 2169 bbls. daily and 67,241 in the total from December production of 583,835 bbls. daily and 18,098,891 total. This production figure of 581,666 bbls. per day for January is 98,431 bbls. less than the daily average for a year ago, which was 680,097 bbls. and is a definite indication that California's potential has declined considerably.

Storage

Stocks of all products decreased 3,039,638 bbls, to a total of 128,304,098 bbls. on Jan. 31. This total compares with 131,343,736 on Dec. 31 and 135,243,716 on Jan. 31, 1936. The decrease for the year was 7,939,618 bbls., most of which was in gasoline-bearing crude and in miscellaneous stocks. The decrease in gasoline-bearing crude is the most favorable aspect of the stock report, that crude being hardest and the most expensive to handle in storage. In detail, comparing January with December, non-gasoline bearing crude decreased 407,215 bbls., unblended natural gasoline increased 161,971, gasoline increased 912,542, naphtha distillates decreased 211,322, and all others decreased 514,658 bbls.

Offshore Shipments Hit 3-Year High

The highest daily average for any one month since November, 1934, was reached during January, 1937, in offshore tanker shipments of petroleum and petroleum products from California to points outside the Pacific Coast territory, when totals reached 209,302 bbls. daily, according to preliminary statistics compiled by Oil Producers Agency.

In sharp contrast to this record high, however, was the daily average of offshore shipments for December, 1936, which fell to a low of 130,544 bbls; the lowest daily average for any one month since September, 1933.

Interpretation of these unusual levels must take into account the trend in offshore shipments during the last five months. Since that time monthly shipments have been alternately low and high with the daily average for any two consecutive months resulting in a figure approximating the yearly daily average. Thus, the January daily average figure, while representing a high point in offshore tanker shipments, may, when compared to the February daily average figure, actually present a less spectacular picture.

OFFSHORE TANKER SHIPMENTS FROM PACIFIC COAST TERRITORY

(All data in barrels)

	Pacific Foreign	Atlantic Foreign	Inter-Coastal	Total	Pacific Foreign	Atlantic Foreign	Inter-Coastal	Total
	January, 1937*				January, 1936			
Gasoline	659,005	573,598	195,744	1,428,347	675,433	314,595	522,703	1,512,731
B/D	21,258	18,503	6,314	46,075	21,789	10,148	16,861	48,798
Crude	1,424,001	.....	.....	1,424,001	984,814	.....	.....	984,814
B/D	45,935	.....	.....	45,935	31,768	.....	.....	31,768
Fuel	2,563,627	283,278	146,967	2,993,872	1,777,541	.....	77,391	1,854,932
B/D	82,698	9,138	4,741	96,577	57,340	.....	2,497	59,837
All Others	206,052	436,104	.....	642,156	167,703	.....	230,265	397,968
B/D	6,647	14,068	.....	20,715	5,409	.....	7,428	12,837
Total	4,852,685	1,292,980	342,711	6,488,376	3,605,491	314,595	830,359	4,750,445
B/D	156,538	41,709	11,055	209,302	116,306	10,148	26,786	153,240
	January-December, Inc., 1936				January-December, Inc., 1935			
Gasoline	7,632,162	4,290,886	5,814,203	17,737,251	6,618,953	3,678,970	7,105,647	17,403,570
B/D	20,853	11,724	15,886	48,463	18,134	10,079	19,468	47,681
Crude	13,128,392	173,930	.....	13,302,322	14,286,526	1,211,140	.....	15,497,666
B/D	35,870	475	.....	36,345	39,141	3,318	.....	42,459
Fuel	20,580,396	1,119,854	624,693	22,324,943	20,223,409	820,302	876,274	21,919,985
B/D	56,230	3,060	1,707	60,997	55,407	2,248	2,400	60,055
All Others	2,151,434	952,715	1,505,384	4,609,533	2,242,239	33,5f1	1,738,474	4,014,224
B/D	5,878	2,603	4,113	12,594	6,143	92	4,763	10,998
Total	43,492,384	6,537,385	7,944,280	57,974,049	43,371,127	5,743,923	9,720,395	58,835,445
B/D	118,831	17,862	21,706	158,399	118,825	15,737	26,631	161,193

All data except January, 1937, are from U. S. Bureau of Mines.

*Final figures for January, 1937, are not available; however, it is believed that the given amounts will closely approximate the final data. Total offshore tanker shipments for December, 1936, amounted to 4,046,877 bbls., which figure is 2.01% or 79,950 bbls. more than the preliminary data previously given.

Offshore tanker shipments or exports are shipments to points outside the Pacific Coast territory.

Package and rail shipments from Pacific Coast territory to the above geographical areas (normally 3000-5000 B/D) are added to total offshore tanker shipments to determine total offshore shipments.

PRODUCTION « » DEVELOPMENT

(Figures of Production and Stocks are in barrels of 42 Gals.)

	Total Production January	—DAILY AVERAGE— Jan., 1937	Dec., 1936	Jan., 1936
Group No. 1—				
Belridge—North	468,737	15,121	14,152	9,578
Belridge—South	58,702	1,894	1,850	2,304
Coalinga	501,679	16,183	15,442	21,326
Edison	154,793	4,993	5,344	5,561
Elk Hills	263,062	8,486	8,408	9,708
Fruitvale	263,024	8,485	8,654	7,470
Greeley	13,896	448	128	.....
Kern River	466,736	15,056	14,692	16,457
Kettleman Middle Dome	6,385	206	235	416
Kettleman North Dome	2,401,573	77,470	77,660	96,780
Lost Hills	118,938	3,837	3,705	4,667
McKittrick	49,154	1,586	1,749	4,194
Midway-Sunset	2,038,611	65,762	66,458	62,095
Mountain View	665,957	21,482	20,762	36,018
Mount Poso	557,390	17,980	17,907	22,537
Round Mountain	366,260	11,815	11,472	10,210
Ten Section	31,467	1,015	1,034	.....
Wheeler Ridge	10,089	325	332	409
Group No. 2—				
Capitan	56,909	1,836	1,859	1,849
Elwood	300,839	9,705	10,479	16,109
Rincon	65,277	2,105	2,216	2,071
San Miguelito	68,471	2,209	2,145	1,650
Santa Barbara	23,312	752	764	2,170
Santa Maria	147,749	4,766	5,328	4,027
Summerland	1,144	37	35	36
Ventura Avenue	1,050,427	33,885	34,427	40,520
Ventura-Newhall	153,619	4,955	5,030	4,283
Watsonville	1,860	60	60	60
Group No. 3—				
Brea-Olinda	253,304	8,171	8,065	9,984
Coyote—East	94,600	3,051	2,834	2,771
Coyote—West	236,867	7,641	8,035	10,426
Dominguez	757,519	24,436	24,896	30,610
El Segundo	66,025	2,130	2,100	.....
Huntington Beach	1,082,930	34,933	35,331	41,239
Inglewood	397,627	12,827	13,132	15,433
Lawndale	2,601	84	91	270
Long Beach	1,926,323	62,139	63,596	77,838
Los Angeles-Salt Lake	25,052	808	798	747
Montebello	277,900	8,964	8,855	7,977
Playa Del Rey	319,553	10,308	10,382	16,164
Potrero	8,568	276	297	332
Richfield	227,620	7,343	7,210	8,238
Rosecrans	69,864	2,254	2,202	2,737
Santa Fe Springs	1,351,217	43,588	44,386	53,740
Seal Beach	294,592	9,503	8,688	11,187
Torrance	252,394	8,142	9,701	6,864
Whittier	28,128	907	909	1,035
Wilmington	52,906	1,707	.....	.....
Total	18,031,650	581,666	583,835	680,097
December	18,098,891	583,835		
Decrease	67,241	2,169		

	New Rigs Up	Producers Active Drilling	Completed	Daily Initial Output	Active Producing	ABANDONED WELLS Drillers	Producers
Group No. 1—							
Belridge—North	1	3	2	14,340	41	....	....
Belridge—South	..	....	....	....	157	....	....
Coalinga	2	4	1	12	864	....	....
Edison	..	2	....	....	87	1	....
Elk Hills	..	....	....	....	151	....	....
Fruitvale	4	7	3	840	131	1	1
Greeley	6	3	....	....	1	....	....
Kern River	15	12	12	1,793	1,313	1	....
Kettleman Middle Dome	..	1	....	....	3	....	....
Kettleman North Dome	2	12	5	5,400	137	1	....
Lost Hills	..	1	1	288	271	....	....
McKittrick	..	2	....	....	127	....	....
Midway-Sunset	17	22	11	1,929	2,339	....	2
Mountain View	7	8	4	2,432	174	1	2
Mount Poso	4	7	2	155	237	2	....
Round Mountain	1	1	4	1,284	118	....	....
Ten Section	1	5	....	....	2	....	....
Wheeler Ridge	..	....	....	....	26	....	....
Group No. 2—							..
Capitan	..	...	....	....	29	1	....
Elwood	..	1	....	....	78	....	1
Rincon	1	....	1	690	31	....	....
San Miguelito	1	2	....	....	10	....	....
Santa Barbara	..	....	....	....	53	....	2
Santa Maria	4	8	4	7,924	200	2	....
Summerland	..	....	....	....	19	....	....
Ventura Avenue	2	5	2	683	248	....	1
Ventura-Newhall	4	13	1	100	569	3	1
Watsonville	..	....	....	....	7	....	....
Group No. 3—							
Brea-Olinda	..	....	....	....	364	....	....
Coyote—East	1	3	1	60	75	1	....
Coyote—West	1	1	....	....	43	....	1
Domingues	..	6	1	240	136	....	....
El Segundo	4	12	....	....	4	....	....
Huntington Beach	7	8	11	2,194	534	....	1
Inglewood	1	....	....	....	200	....	....
Lawndale	..	....	....	....	6	....	....
Long Beach	1	2	....	....	1,244	8	5
Los Angeles-Salt Lake	..	....	....	....	122	....	....
Montebello	2	4	....	....	199	....	....
Newport	..	1	....	....	....	....	1
Playa Del Rey	..	1	1	741	210	....	1
Potrero	..	....	....	....	10	....	....
Richfield	4	5	3	599	265	....	....
Rosecrans	..	....	....	....	77	....	....
Santa Fe Springs	..	2	1	10	632	....	7
Seal Beach	..	....	....	....	105	....	1
Torrance	3	4	1	140	523	....	....
Whittier	..	....	....	....	158	....	....
Wilmington	21	8	3	1,743	14	....	....
Miscellaneous Drilling	5	53	....	....	....	6	....
Group No. 4—Gas Fields—							
Buena Vista Lake	..	....	....	....	4	....	....
Buttonwillow	..	....	....	....	27	....	....
Chowchilla	..	....	....	....	....	....	....
Delano	..	....	....	....	....	....	....
Dudley Ridge	..	....	....	....	....	....	....
Goleta	..	....	....	....	3	....	....
McDonald Island	..	1	....	....	....	....	....
Rio Vista	2	1	2	Gas	....	....	....
Semi-Tropic	..	....	....	....	....	....	....
Tracy	..	....	....	....	6	....	....
January	124	231	77	43,597	12,384	28	27
December	75	227	61	38,167	12,230	25	23
Increase	49	4	16	5,430	154	3	4
Average for year 1936	91	234	67	31,167	12,191	27	17
Average for year 1935	86	243	64	55,082	12,136	29	17
Average for year 1934	53	196	38	47,553	11,053	21	17

STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES

	Jan. 31, 1937	Dec. 31, 1936	January Changes	Jan. 31, 1936
1. Non-Gasoline-Bearing Crude, Residuum, Gas and Diesel Oils	71,465,041	74,445,997	−2,980,956	70,055,178
2. Gasoline-Bearing Crude	33,363,124	33,770,339	− 407,215	40,642,706
3. Unblended Nat. Gas	1,990,607	1,828,636	+ 161,971	1,750,613
4. Gasoline (not including distributing and service stations)	13,297,082	12,384,540	+ 912,542	11,580,629
5. Naphtha Distillates	1,176,618[1]	1,387,940[1]	− 211,322	1,916,722[1]
6. All Other Stocks	7,011,626[2]	7,526,284[2]	− 514,658	9,297,868[2]
TOTAL	128,304,098	131,343,736	−3,039,638	135,243,716
[1]Estimated amount of unfinished gasoline contained in item 5	1,001,614	1,133,326		1,507,921
[2]Coke included in item 6	190,467	246,292		448,211

Development of Rieber System Of Geophysics Gets Attention

Combining of mathematics, acoustics, radio, sound-recording, electricity, and other branches of science results in geophysical method which is meeting with great success.

Involving in its development and operation the knowledge and experience of many scientists, expert in the fields of mathematics, acoustics, radio, sound-recording, electricity and other branches of science, the Rieber Sonograph System of Geophysical exploration is attracting widespread attention from petroleum geologists, geophysicists and practical oil men in the United States and abroad. Able to map and to detail geological structures which earlier methods were either unable to define or were at best able to show with such little detail that the results were considered inconclusive, the Sonograph System is especially appreciated by those who desire to carry on exploratory work in many regions of the Gulf Coast, Mid-Continent and California areas.

Involved in the development of the basic principles upon which the Sonograph System operates is the experience gained through many years of scientific work on the part of the founder of the organization, Frank Rieber, who prior to the World War, was engaged in the development of apparatus for generating and for measuring X-rays. During the war he served as a member of the National Submarine Defense Commission and devoted his attention to the development of various methods for detecting enemy submarines. After the war, he turned his attention to geophysical exploration for which many of the facts acquired during his submarine detecting experience served as an excellent background.

Since 1923, Rieber and his organization have been engaged in geophysical work, in those early days, developing a novel method for refraction shooting and employing it to do about half of the geophysical exploration in California carried on by that earlier method.

Coincidental with his work as a geophysicist, Rieber undertook the development of various methods of sound recording for motion picture work, from which he derived the experience which made possible the present Sonograph System and apparatus for geophysical exploration by the reflection method.

Present Staff

The present staff of Rieber Laboratories numbers over thirty members, including geologists, geophysicists, physicists, and electrical engineers, all of whom are at present actively engaged in the development and application of new geophysical methods. In addition to the headquarter's staff, the organization operates two sonograph field parties and is opening a branch in Houston, Texas, from which a third party will operate.

Prominent on the headquarter's staff is E. F. McNamee, associated with Mr. Rieber since the first stages of the development of the sonograph. He is an electrical engineer of wide experience in the development, production and operation of vacuum tubes, amplifiers and their associated circuits.

Mr. McNamee has charge of design and production at the Rieber laboratory, and in that capacity is responsible for all details involved in the construction and maintenance of sonograph equipment. Assisting him are three production engineers and a number of technicians.

Curtis H. Johnson, who has charge of interpretation methods, is an acoustical engineer and mathematician with previous experience along the lines of sound-recording and the measurement of vibration.

Ralph H. Brandt, supervisor of field operations in California for Rieber Laboratories, is a graduate electrical engineer with extensive experience in the design and operation of field geophysical equipment.

E. M. Lane, supervising field operations in Texas, will shortly take up headquarters at Houston, where he will direct all work for that district. He has served as an engineer on Mr. Rieber's staff since 1926 and has had extremely wide experience in directing and operating field parties both on refraction and reflection shooting.

The Sonograph System supplies a comprehensive approach to the problem of defining the most complex as well as relatively simple earth structures by reflection shooting.

Supply Firm Opens New Valley Stores

Gordon B. Tunnell, president; H. Clyde Wood, vice-president; Thomas J. Neilan, vice-president; members of the firm Tunnell, Wood & Neilan, who opened a new oil well supply store in Taft, February 15, and will open one at Bakersfield, March 15.

Tunnell, Wood & Neilan have established a complete oil well supply service for drillers, producers, pipe lines, and refineries in the Los Angeles, Taft, Bakersfield and Kettleman Hills districts, according to Gordon B. Tunnell, president of the company. Associated with Mr. Tunnell is H. Clyde Wood, vice-president in charge of operations in Bakersfield, Taft and Kettleman Hills districts, and Thomas J. Neilan, vice-president.

The company has opened a completely stocked new store in Taft, at the corner of Center and West Sts., under Joseph W. McGalliard. Plans also call for the opening of a new store in Bakersfield about March 15th with H. Clyde Wood as manager and Vernon Anderson working the Kettleman Hills district. A new building is being erected at 30th and K Streets to house the Bakersfield store.

Complete stocks of wire rope, manila rope, rotary chain, brake lining, pump and engine parts, belting, hose, packing, general hardware, tools, boiler trimmings, pipe, valves, and fittings will be carried in the Taft and Bakersfield stores.

In the Martin-Decker advertisement which appeared in the February 5th issue of the California Oil World in connection with the Associated Oil Co.'s world's record deep producer, the cut of the old style Martin-Decker Weight Indicator was inadvertently used. This was a mistake, as the Martin-Decker "Quintuplex" Drilling Control Instrument was used throughout drilling operations. Associated uses the "Quintuplex" as regular equipment and has obtained splendid results as was proven by McGonigle No. 12 being less than 1 degree off vertical. The accompanying cut shows driller I. F. MacKay with the "Quintuplex" on Associated Lloyd No. 137, now drilling at Ventura.

Blackburn Heads Vernon Tool Co.

Ward Blackburn

John H. Suter

Vernon Tool Co., Ltd., announces the appointment of Ward Blackburn as vice president and manager, and John H. Suter as chief engineer.

Ward Blackburn, for the past 20 years has been manager at Los Angeles for Ingersoll-Rand Co. He has been closely identified with the California oil and gas industry and has followed the development of oil field, power plant and mining machinery since 1914.

John H. Suter was chief engineer for the Western Gas Engine Co. and the Western Machinery Co. for 12 years.

Business and Professional Directory

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1 inch dia., 6x19, plow steel, hemp center, 100,000 feet, lengths are 1500 ft., 1600 ft., 2300 ft., 2500 ft. each reel.
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Department of the Interior, U. S. Land Office, Sacramento, California. Notice is hereby given that Lot 1 of the NE¼ and the NE¼ SW¼ Sec. 2, T. 28 S., R. 27 E., M.D.M., California, containing 120 acres in the producing Kern Front Oil Field, are offered in a single unit to the qualified bidder of the highest amount offered per acre, the minimum bid being $25 per acre, as a bonus for the privilege of leasing land under section 17 of the amendatory leasing act of August 21, 1935 (49 Stat. 674), at the sliding royalty rate scale in the standard lease form on page 6 of Circular 1386, at the sale to be held in the United States land office at Sacramento, California, at 10 a.m. on April 9, 1937. The successful bidder must deposit on the day of the sale with the officer in charge, a certified check on a solvent bank, or cash, for one-fifth of the amount bid by him and file the showing of qualifications to receive a lease required by section 7 of said circular 1386. Bidders are warned against violations of the provisions of section 59, U. S. Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register. 4/5t

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1 Type "R" Okell Rotary Drilling Outfit, 4-speed Drawworks & Table on skids, Holt engine on skids, 2 Pumps and Engine on skids, complete 3 Unit outfit with 4-in. Kelly & all tools. Entirely Rebuilt like new $5,000.00
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1 No. 56 Star Cable Tool Tractor Drill Rig with 45 Holt Engine and Lines, Ventura County $1,900.00
1 No. 56 Star Cable Tool Drilling outfit complete with all lines & many tools, Northern California $2,750.00
1 21-W Bucyrus-Armstrong Cable Tool Rig mounted on White Truck, like new, drilled less than 500 feet. $1,750.00
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MAPS

Large map of Los Angeles Basin oil fields and map showing all California oil fields. These maps indicate wells drilling, wells producing and abandoned, with depths. Paper, $15; cloth, $20. Also maps of Mid-Continent and Rocky Mountain areas and individual maps of oil and gas fields in any other districts.
All maps revised up to date of purchase.

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